THE LANCET

A Journal of British and Foreign Medicine, Surgery, Obstetrics, Physiology, Chemistry, Pharmacology, Public Health, and News.

Telegrams—LANCET, WESTRAND LONDON. *Telephone*—GERRARD 4314 & 4315. *Offices*—423, Strand, London, W.C.

No. XIX. OF VOL. I., 1928. LONDON, SATURDAY, MAY 12, 1928 Pp. 128—Price 1s.
No. 5463. Vol. CCXIV. Founded 1823. Registered as a Newspaper. Published Weekly. Annual Subscription Inland £2 2s. Abroad £2 10s.

OXFORD MEDICAL PUBLICATIONS.

SEE PAGE 7.

THE HARVEY TERCENTENARY.

We have two copies left of HARVEY'S MANUSCRIPT LECTURES, Edited with Autotype Reproductions of the originals, by a Committee of the Royal College of Physicians of London. We are willing to sell these for cash at Seven Guineas each.
J. & A. Churchill, 40, Gloucester Place, Portman Square, W.1.

Crown 8vo. Pp. xvi+226, with 6 plates. Price 13s. 6d.; postage 6d.

SIR ARTHUR NEWSHOLME'S EVOLUTION OF PREVENTIVE MEDICINE.

¶ The author by his wide information and administrative experience is specially qualified to recount the progress of preventive medicine.—BRITISH MEDICAL JOURNAL.
Baillière, Tindall & Cox, 7 & 8, Henrietta-street, London, W.C.2.

Medicine Monograph Series. Vol. X.
Royal 8vo. Pp. 100, with 5 plates and 20 figures. Price 11s. 6d.; postage 6d.

THE SIGNIFICANCE OF THE PHYSICAL CONSTITUTION IN MENTAL DISEASES.

By F. I. WERTHEIMER and FLORENCE E. HESKETH, of the Phipps Psychiatric Institute, Johns Hopkins Hospital.
¶ A sound and definite contribution to the problem of the correlation between mental disease and constitution . . . a valuable and practically complete historical review of the various classifications of body types.—BULLETIN OF JOHNS HOPKINS HOSPITAL.
Baillière, Tindall & Cox, 7 & 8, Henrietta-st., Covent Garden, W.C.2.

BY CHARLES J. HEATH, F.R.C.S.,

Consulting Aural Surgeon, Metropolitan Asylums Board; late Surgeon, Throat Hospital, Golden Square, London.

OTITIS MEDIA (MASTOID DISEASE):

ITS SYMPTOMS, DIAGNOSIS, PROGNOSIS AND TREATMENT BY MODERN METHODS, thus saving the hearing of the discharging ear with perforated drumhead.

Price 5s.; postage 3d.

"We have no hesitation in describing Heath's paper as epoch-making."—ST. BARTHOLOMEW'S HOSPITAL JOURNAL.

"This work is recommended to specialists and even to those who are not."—L'OTO RHINO LARYNGOLOGIA INTERNATIONALE.

Baillière, Tindall & Cox, 7 & 8, Henrietta-st., London, W.C.2.

NOW READY. 4/6 net.

THE TREATMENT OF

CHRONIC DEAFNESS

BY THE ELECTROPHONOÏDE METHOD OF ZUND-BURGUET.

By GEORGE C. CATHCART, M.A., M.D.,
Consulting Surgeon to the Throat Hospital, Golden-square.
Oxford University Press, Amen House, London, E.C.4.

THIRD EDITION. With many Illustrations. 12s. 6d. net.

TREATMENT OF DISEASES OF THE SKIN.

By KNOWSLEY SIBLEY, M.D.Camb.
London: Edward Arnold & Co., 41 and 43, Maddox-street, W. 1.

BY LIEUT.-COL. ROBERT HENRY ELLIOT.

M.D., B.S. Lond., F.R.C.S. Eng., I.M.S. retd.

A TREATISE ON GLAUCOMA.
2nd Edition, Revised and Enlarged. 30s. net.

TROPICAL OPHTHALMOLOGY.
With 7 Plates and 117 Illustrations. 31s. 6d. net.
Spanish and French Editions, 1922. Full German Abstract.

THE CARE OF EYE CASES: 12s. 6d. net.
A MANUAL FOR NURSES, PRACTITIONERS, AND STUDENTS
Chinese Edition. Oxford University Press.

GLAUCOMA 4s. net.
A HANDBOOK FOR THE GENERAL PRACTITIONER.

THE INDIAN OPERATION OF COUCHING FOR CATARACT.
7s. 6d. net. H. K. Lewis and Co., Ltd.

With 16 plates. Demy 8vo. 9s. net. Postage 5d.

PYELOGRAPHY:

ITS HISTORY, TECHNIQUE, USES AND DANGERS.
By ALEX. E. ROCHE, M.A., M.D., M.Ch., F.R.C.S.
With an Introduction by SIR JOHN THOMSON-WALKER, F.R.C.S.
". . . will be of great use . . . . an up-to-date treatise."—B. M. JNL.
London: H. K. Lewis & Co. Ltd., 136 Gower-street, W.C. 1.

NEW EDITIONS — JUST ISSUED.

DE LEE'S OBSTETRICS

FIFTH EDITION.

JORDAN'S GENERAL BACTERIOLOGY.

NINTH EDITION.

See Saunders' Advertisement on Page 5.

OPHTHALMIC SURGERY

including the Author's
OPERATION FOR IMMATURE CATARACT.
By V. NESFIELD, F.R.C.S. Eng., Major I.M.S. (retired),
Ophthalmic Surgeon, The Queen's Hospital for Children, London, E.
Demy 8vo, with illustrations. 9s., postage 6d.
H. K. Lewis & Co. Ltd., 28, Gower Place, W.C. 1.

CANCER OF THE BREAST,

AND ITS TREATMENT.
By W. SAMPSON HANDLEY, M.S., M.D. Lond., F.R.C.S. Eng.
Second Revised Edition. With 82 Illustrations. 30s. net.
Published for the Middlesex Hosp. Press by John Murray, London.

STERILITY IN WOMAN:

ITS CAUSES AND TREATMENT.
By ROBERT A. GIBBONS, M.D., F.R.C.S.E.,
Gynæcologist to the Grosvenor Hospital for Women, etc.
"It is written clearly, and should make a special appeal to the general practitioner . . . . . We can heartily recommend this useful and well-written book."—THE LANCET.
"The volume provides an admirable account of the whole subject. It is sufficiently full for the needs of the family practitioner, and is written in a refreshingly clear and lucid style."
—BRITISH MEDICAL JOURNAL.
With 44 illustrations, 12s. 6d. J. & A. Churchill, 1923.

DISEASES OF THE RECTUM AND COLON

AND THEIR SURGICAL TREATMENT.

BY

P. LOCKHART-MUMMERY,

F.R.C.S.ENG., M.A., M.B., B.C.CANTAB.,

Senior Surgeon to St. Mark's Hospital.

Over Two Hundred Plates and Illustrations. Price 25s.

Baillière, Tindall & Cox, 8, Henrietta-street, Covent Garden.

ON THE BREAST.

By DUNCAN C. L. FITZWILLIAMS,
C.M.G., M.D., Ch.M., F.R.C.S. Ed. and Eng.
Royal 8vo. 456 pp. 2 Plates, 166 Illustrations. 30s. net.
LANCET.—"The book is packed with accurate clinical observations and bears evidence throughout of extensive clinical experience and wide reading on the part of the author."
Wm. Heinemann (Medical Books) Ltd., 99, Great Russell Street, London, W.C.1.

RADIUM IN CANCER,

AND
THE SURGERY OF ACCESS.
By ARTHUR B. SMITH, M.B., F.R.C.S.E.,
SYDNEY M. SMITH, M.B., Ch.B.Ed.
A brief Illustrated Outline of Recent Advances in the Technique of Treatment of Cancer in General Surgery, Gynecology, Laryngology and Dermatology.
With 18 Illustrations. 56 pages. Price 3s. 6d. net; postage 3d.
London: H. K. Lewis & Co. Ltd., 136 Gower-street, W.C. 1.

"It is a compound of yeast and glycerophosphates, and experimentation on mice and rats supports the manufacturers' opinion that restoration of vigour and weight after wasting conditions and under-nourishment should be obtained."
—Vide THE LANCET, 4th February, 1928.

YEAST

95 % of the Medical Men we approach are deeply interested in the treatment of Furunculosis, Acne and allied Blood-Skin complaints with Yeast. Their difficulty in the past has been a suitable method of prescribing.

℞ Tabellæ Cerevisiæ Comp. (Barnold)

Dose: One or two tablets three times daily.

solves the problem by providing a therapeutically pure Yeast Tablet in combination with Glycerophosphates which increase the action of the Enzymes and give the necessary added Stimulant to the System.

Full particulars sent on application to
BARNOLD LTD. 7 & 8, Milverton Street, LONDON, S.E. 11.
Phone: Reliance 2115.

ZŌPLA STRAPPING IS ALWAYS READY FOR USE

It keeps without deterioration and is instantly self-adhesive.

It exerts a powerful grip and does not slip.

On various cloths and felts. WRITE FOR SAMPLES.

Manufacturers of the Original Holland Strapping.
LESLIES LTD., High St., WALTHAMSTOW, LONDON, E.17

VALENTINE'S PREPARATION
NUTRIO PER MT
VOLUME 1 4/5 OZ.
MEAT JUICE
The result of an Original Process of preparing Meat and extracting its Juice by which the elements of nutrition are obtained in a State ready for immediate absorption.
DIRECTIONS. Dissolve one teaspoonful of the Preparation in three tablespoonfuls of cold or warm water; boiling water changes the character of the preparation.

Valentine's Meat-Juice

For **Quieting** the **Irritable Stomach, Aiding Digestion** and **Sustaining** and **Strengthening, Valentine's Meat-Juice** is employed in **Hospital** and **Private Practice** in the treatment of

Diseases of Children.

Dr. Raphael Raimondi, *Consulting Physician of the Montmartre Nurseries, Paris, France:* "I use VALENTINE'S MEAT-JUICE with Nurslings eighteen months to two years old. These very Weak Babies derive great benefit from the use of this tonic preparation. I give it to Debilitated Infants, after they are eighteen months old, in doses of one teaspoonful in thirty grammes of boiled water twice a day, and to be continued for a month."

Park B. Tucker, M. D., *Health Officer, Hamilton, Bermuda:* "I have found VALENTINE'S MEAT-JUICE invaluable for teething children, who readily take and retain it when they refuse everything else. It has also proved very palatable and strengthening in all cases of irritable stomach, especially to that peculiar nausea so often complained of from the abuse of ardent spirits."

For Sale by European and American Chemists and Druggists.

VALENTINE'S MEAT-JUICE COMPANY,
RICHMOND, VIRGINIA, U. S. A.

A 45

THE LANCET

No. 5463. LONDON, SATURDAY, MAY 12, 1928. CCXIV.

CONTENTS

THE WHOLE OF THE LITERARY MATTER IN THE LANCET IS COPYRIGHT.

LINACRE LECTURE on Linacre's Influence on English Medicine. By Sir GEORGE NEWMAN, F.R.C.P. 947

ORIGINAL ARTICLES.

Radium Treatment in Carcinoma of the Mouth and Tongue. By G. E. BIRKETT, M.R.C.S.—(*Illustrated*) 953

Acute Rheumatism in Childhood. By C. J. MCSWEENEY, M.B. 959

CLINICAL AND LABORATORY NOTES.

Eclampsia Treated with Spinal Anæsthesia. By R. H. PARAMORE, F.R.C.S. 933

Toxic Peri-arthritis. By L. C. D. IRVINE, M.R.C.S. 963

A Non-irritating Silver-arsenic Compound. By HAROLD O. LONG, M.R.C.S. 964

MEDICAL SOCIETIES.

Society of Medical Officers of Health: Control of Diphtheria in Institutions 965

Ophthalmological Society: Annual Congress 967

Royal Academy of Medicine in Ireland: Sections of Obstetrics and Anatomy and Physiology 969

Royal Society: Physiology of the Cerebral Hemispheres 970

Medical Society for the Study of Venereal Diseases: The Kahn Reaction 971

REVIEWS AND NOTICES OF BOOKS.

Bedside Diagnosis. Edited by Prof. George Blumer, M.D. 971

Nouveau Traité de Médecine. Publié dous la direction de MM. G. H. Roger, F. Widal, et P. S. Teissier 972

Health and Exercise for Girls. By Anne M. Robertson, B.A. 972

Bolles Lee's Microtomist's Vade-Medum. Edited by Prof. J. Brontë Gatenby, M.A., and E. V. Cowdry, M.A. 972

LEADING ARTICLES.

RADIUM FOR CANCER 973

THE ERROR OF BALLONIUS 974

PULMONARY ATHEROMA .. 974

ANNOTATIONS.

The New Pharmacology .. 975

The Dog and Cat in Dermatology 976

Storage of Spermatozoa .. 976

The Blood in Tuberculosis 976

Beginnings of Local Anæsthesia 976

Chemical Changes in Culture Media 977

Comparative Immunity .. 977

Tumours of the Lung 977

Anæsthetics in Germany .. 978

Tobacco Angina 978

The Royal Academy 978

Continental Anglo-American Medical Association 979

MODERN TECHNIQUE IN TREATMENT.

CCLXXV.—Treatment of Rickets. II. Curative Measures. By HELEN M. M. MACKAY, M.R.C.P. 979

THE SERVICES.

Royal Naval Volunteer Reserve.—Royal Army Medical Corps.—Royal Air Force.—Indian Medical Service 980

PUBLIC HEALTH SERVICES.

A Medical Benefit Inquiry 986

Ultra-violet Light Treatment at Public Baths .. 986

Infectious Disease in England and Wales 986

SPECIAL ARTICLES.

Conference on Rheumatic Diseases, Bath 981

Royal College of Physicians of London: Harvey Tercentenary 982

Notes from India: Medical Research 983

Berlin: Experiments on Children 983

Ireland: Retirement of Prof. J. A. Lindsay 984

Medicine and the Law: Coroner and Medical Practitioner 985

CORRESPONDENCE.

The Auscultatory Gap (Dr. J. M. Stalker, Dr. G. Arbour Stephens, and Dr. Paul C. Gibson) 987

"The Grateful Republic" (Fleet-Surg. W. E. Home) 987

Subcutaneous Emphysema during Parturition (Dr. S. M. Wells) 988

Anatomical Nomenclature (Dr. W. Cuthbert Morton) 988

Liver in Pernicious Anæmia (Dr. W. E. Cooke) 989

The Meinicke Reaction (Prof. D. T. Barry) 989

Has the Campaign against Venereal Disease been a Failure? (Dr. Elizabeth Gourlay, Dr. J. F. Peart, and Mr. H. Wansey Bayly) 989

Multiple Dental Extractions (Mr. F. Talbot) 990

Doctors and the Nursing Homes Registration Act, 1927 (Miss E. M. Homersham) 990

Medical Autographs (Dr. J. B. Hurry) 990

PARLIAMENTARY INTELLIGENCE.

Notes on Current Topics: National Health Insurance Bill.—Health Insurance (Provisional Regulations) 991

House of Commons: Regional Medical Officers' Fees.—School Medical Services.—Miners' Phthisis.—Treatment of Venereal Disease.—Death Certificates and Reports to the Coroner .. 993

OBITUARY.

Thomas Villiers Crosby, M.D.—(*With Portrait*) .. 994

MEDICAL NEWS.

University of Oxford 995

University of Cambridge .. 995

University of Sheffield 995

Royal College of Physicians of London and Surgeons of England 995

West Surrey Hospital League 971

Examinations for Mental Nurses 975

The Devonshire Ambulance Service 985

Visit of Dr. Schweitzer to England 990

Donations and Bequests .. 990

Bradford Royal Infirmary 994

Rockefeller Medical Fellowships 994

Rating of Hospitals 995

Continental Anglo-American Medical Association 995

Royal College of Physicians of London 996

Royal College of Physicians of Edinburgh 996

Univ. of London 996

Biochemical Society 996

University of London Graduates' Association. 996

West Kent Medico-Chirurgical Society 996

NOTES, COMMENTS, AND ABSTRACTS.

The Hospital of St. Matteo, Zara 998

Polyneuritis Complicating Mumps 998

The School-boy's Howler .. 998

Relation of the Thyroid Gland to the Nasal Mucous Membrane 998

Domestic Biology 998

The Year of Ambroise Paré's Birth 998

A Home for Disseminated Sclerosis 998

Medical Diary 996

Appointments 997

Vacancies 997

Births, Marriages, Deaths 997

J. & A. CHURCHILL

NOW READY. 2nd Edition. 166 Illus. 24s., postage 9d.

SYDNEY SMITH'S

FORENSIC MEDICINE

EDEN & LOCKYER'S

GYNÆCOLOGY

3rd Edition. 556 Text-figures, 32 Coloured Plates. 36s., postage 1s.

ROWLANDS & TURNER'S

OPERATIONS OF SURGERY

7th Edition. 900 Illustrations, 43 in Colour. 2 vols. 70s., postage 1s. 3d.

The Recent Advances Series.

12s. 6d. each.

SIR LEONARD ROGERS' TROPICAL MEDICINE. 13 Illustrations.

WOOLLARD'S ANATOMY. 4 Col. Plates and 73 Text-figures.

BEAUMONT AND DODDS' MEDICINE. 4th Edition. 46 Illus. *4 Editions in 4 Years.*

PINEY'S HÆMATOLOGY. 4 Plates and 18 Text-figures.

EVANS' PHYSIOLOGY. 2nd Edition. 70 Illus.

BOURNE'S OBSTETRICS & GYNÆCOLOGY. 58 Illus.

PRYDE'S BIOCHEMISTRY. 2nd Edition. 38 Illus.

DUKE-ELDER'S OPHTHALMOLOGY. 4 Col. Plates, 73 Text-figures.

London: J. & A. CHURCHILL, 40, Gloucester Place, Portman Square, W.1

A SELECTION FROM EDWARD ARNOLD & CO's. MEDICAL LIST

Clinical Physiology
in Relation to Modern Diagnosis and Treatment

By R. J. S. McDOWALL, M.B., D.Sc., F.R.C.P. Edin., Professor of Physiology, King's College, London. viii + 422 pages, 4 plates. 21s. net.

A Text-book of Pathology

By ROBERT MUIR, M.A., M.D., Sc.D., F.R.S., Professor of Pathology, University of Glasgow. viii + 774 pages. 425 Illustrations. 35s. net.

A Text-book of Surgical Pathology

By C. JENNINGS MARSHALL, M.D., M.S., F.R.C.S., Assistant Surgeon; and ALFRED PINEY, M.D., Ch.B., M.R.C.P., M.R.C.S., Director of the Institute of Pathology, at Charing Cross Hospital. viii + 470 pages. 173 Illus. 21s. net.

A System of Clinical Medicine

By the late THOMAS DIXON SAVILL, M.D.Lond. *Seventh Edition.* xviii + 1,004 pages, 4 Coloured Plates and 176 Illustrations. 28s. net.

Food, and the Principles of Dietetics

By ROBERT HUTCHISON, M.D.Edin., F.R.C.P., Physician to the London Hospital and to the Hospital for Sick Children, Great Ormond Street. *Sixth Edition.* xx + 610 pages. Illustrated. 21s. net.

Lectures on Diseases of Children

By ROBERT HUTCHISON. *Fifth Edition.* xii + 460 pages. Illustrated. 21s. net.

Lectures on Dyspepsia

By ROBERT HUTCHISON. *Second Edition.* 6s. net.

The Common Neuroses:
Their Treatment by Psychotherapy

By T. A. ROSS, M.D., F.R.C.P.E., Medical Director, Cassel Hospital for Functional Nervous Disorders. 12s. 6d. net.

Medico-Legal Injuries

By ARCHIBALD McKENDRICK, F.R.C.S.Ed., Referee under the Workmen's Compensation Act; Consulting Radiologist to Edinburgh Royal Infirmary. viii + 342 pages. Fully Illus. 18s. net.

Human Embryology and Morphology

By Sir ARTHUR KEITH, M.D., LL.D., F.R.C.S. Eng., F.R.S., Conservator of the Museum and Hunterian Professor, Royal College of Surgeons. *Fourth Edition.* viii + 492 pages. 490 Illustrations. 30s. net.

The Practice of Surgery

By RUSSELL HOWARD, C.B.E., M.S.Lond., F.R.C.S.Eng. Surgeon to the London Hospital. *Third Edition.* viii + 1,280 pages. Fully Illustrated. 30s. net.

The House-Surgeon's Vade-Mecum

By RUSSELL HOWARD and ALAN C. PERRY, M.B., M.S., F.R.C.S., Assistant Surgeon to the London Hospital. *Second Edition.* viii + 520 pages. 159 Illustrations. 12s. 6d. net.

Surgery of Childhood

By JOHN FRASER, M.D., Ch.M., F.R.C.S.Ed., Regius Professor of Surgery in the University of Edinburgh; Consulting Surgeon to the Royal Hospital for Sick Children, Edinburgh. Two Volumes. xii + 1,154 pages. 598 Illus. 42s. net.

A Manual of Pharmacology

By W. E. DIXON, M.A., M.D., B.Sc., F.R.S., Examiner in Pharmacology in the Universities of Oxford, Cambridge, and London. *Sixth Edition.* xii + 478 pages. Illustrated. 18s. net.

The Diagnosis of Nervous Diseases

By Sir JAMES PURVES-STEWART, K.C.M.G., C.B., M.D., F.R.C.P., Senior Physician to the Westminster Hospital. *Sixth Edition.* viii + 648 pages. 285 Illustrations. 30s. net.

Pulmonary Tuberculosis

By G. T. HEBERT, M.A., M.D.(Oxon.), M.R.C.P. (Lond.), Physician-in-Charge of the Tuberculosis Department, St. Thomas's Hospital. 7s. 6d. net.

Sunshine and Open-air

By LEONARD HILL, M.B., F.R.S., Director of the Department of Applied Physiology, National Institute of Medical Research. *Second Edition.* Illustrated. 10s. 6d. net.

Light Treatment in Surgery

By Dr. O. BERNHARD (of St. Moritz). Translated by R. KING BROWN, M.D., D.P.H., Medical Officer of Health for Bermondsey. xii + 317 pages. 105 Illustrations. 21s. net.

The Treatment of Diseases of the Skin

By W. KNOWSLEY SIBLEY, M.A., M.D., B.Ch.(Camb.), M.R.C.P., M.R.C.S., Physician to St. John's Hospital for Diseases of the Skin, London. *Third Edition.* Illustrated. 12s 6d. net.

The Routine Examination of the Eye

By BASIL T. LANG, M.A., F.R.C.S., late Surgeon to the Royal London Ophthalmic Hospital (Moorfields). Illustrated. 6s. net.

London: EDWARD ARNOLD & CO., 41-43, Maddox Street, W.1

Linacre Lecture

ON

LINACRE'S INFLUENCE ON ENGLISH MEDICINE.

Delivered at St. John's College, Cambridge, on May 5th

BY SIR GEORGE NEWMAN, K.C.B., M.D. EDIN., D.C.L., LL.D.,

FELLOW OF THE ROYAL COLLEGE OF PHYSICIANS OF LONDON.

[Sir George Newman began his address with an eloquent description of Florence as the centre of cultivation of learning and art, when "there came to this beautiful city of flowers and colour and song about 1485 a grave, studious, and sober-minded Englishman, Thomas Linacre."]

THE LIFE AND WORK OF LINACRE.

Linacre was born at Canterbury probably in 1460, and went to the monastery school at Christ Church, Canterbury, under the priorship of William Tilly, more commonly called Selling, from the name of the Kentish village of which he was a native. Selling was a Fellow of All Souls and an old pupil of Politian at Bologna, and as presiding monk in the Canterbury Monastery the tutor and preceptor of Linacre, who at the age of 20 was removed to Oxford. There he was elected in 1484 Fellow of All Souls, which became at that time an English home of Greek learning. Under Vitelli he studied Greek in company with Grocyn and William Latimer, and became an accomplished scholar. When Archbishop Warham appointed Selling, the Prior of Christ Church in Canterbury, as an ecclesiastical ambassador to Rome, Linacre accompanied him and by him was introduced to Politian. Whether or not he sojourned en route at Bologna, Linacre soon found himself in the midst of the Platonic Academy at Florence, patronised by Lorenzo de Medici, the companion and fellow student of his sons, Piero and Giovanni, and the pupil of Chalcondyles and Politian. We do not know the exact pursuits or studies of Linacre; we only know he stayed in Florence for more than 12 months, that he associated with the *habitués* of the Medician court, attended the Academy classes and disputations, read in the libraries, shared in the pleasures and gaieties of Florence and became intimately acquainted with Chalcondyles, Politian, and Ficino, the leaders of the Academy, and brilliant friends of Lorenzo de Medici. We cannot here enter into the scholarship and lives of these four men, but we cannot doubt that they left an enduring mark, the love of learning, upon him. It is as if he came out of the shades of scholasticism at Oxford into the sunlight of a larger life and a wider purpose. Like Saul of Tarsus on the road to Damascus, or like Mahomet on Mount Hira, he saw a new light.

From Florence Linacre, now disciple of Politian, repaired to Rome. A perusal of ancient manuscripts contained in the libraries of the capital had been one great motive of Linacre's journey. One day he was reading in the Vatican when Hermolaus Barbarus suddenly approached the place where he was seated, and introduced himself. This accidental interview began a firm and lasting friendship which was afterwards strengthened by a similarity of disposition and pursuit. Dr. Noble Johnson says that "of all the acquaintance which Linacre formed in Italy, this was perhaps the most distinguished, and the value of the friendship was enhanced by the literary celebrity of the individual with whom it was contracted." Who was Barbarus? He was born in Venice in 1454, son of a senator, grandson of a doge, and deputed envoy, and subsequently Ambassador, to Rome from the States of Venice, and who on account of services rendered was nominated by Pope Innocent VIII. to be patriarch of Aquileia. For accepting such preferment he was proscribed by his government, but was residing in Rome when Linacre arrived. Barbarus, "indifferent to worldly honours: acknowledged but two masters, Christ and letters." Above all, he was a student of scientific and medical literature, a devoted translator of Aristotle, Dioscorides, and Pliny at Padua, and held a chair in that University. He was the vigorous critic of Averroistic Aristotelianism. He died of the plague in 1494, aged 40.

On leaving Rome Linacre proceeded to Venice to seek the acquaintance of Aldus Manutius, a disciple of Aristotle, and the master printer of Greek editions, who played so large a part in the struggle between Hellenism and Arabism. From Venice Linacre went to Padua, where he first really studied practical medicine, and took the doctorate degree. Thence by Vicenza and through the Cevennes he returned to London. He is believed to have sat at the feet of the celebrated Italian physician Leonicenus during a brief sojourn at Vicenza.[1]

Happy is the student who at an early stage in his studies receives the inspiration of great purpose and the contact of great minds. It is the dynamic of all true education. Linacre took with him to Italy a scholastic grounding in the classics; he brought back with him a living comprehension of the service which pure Hellenism could render to English Medicine, of the essential importance of Aristotle, and of the necessity of a reorientation of medical knowledge as transmitted by the Arabs. The Florentine Academy repudiated Arabist teaching. We must not forget that 450 years ago a training in medicine in Western Europe meant a course of reading and disputation on Hippocrates, Galen, and Avicenna. In the first year the student usually read the first Canon of Avicenna and the ninth book of Rhazes; in the second year the *Ars parva* of Galen, and the fourth book of Avicenna; in the third year the aphorisms of Hippocrates, the works of Dioscorides and Commentaries on Avicenna. Medicine was taught as a branch of philosophy after the style of Averroes. Such a course Linacre had pursued at Oxford and in Italy. He went out a scholar, he returned a doctor of medicine. It was not until the sixteenth century that the study of medicine dealt directly with the body of man and was based upon experimental science.

When Linacre came back to England he settled down again at Oxford, but as a teacher rather than an undergraduate, as a translator rather than a student, as a medical reformer rather than a schoolman. He was incorporated as M.D., and with Grocyn and Lilly he was recognised as one of the pre-eminent restorers of Greek scholarship in England. He was, in fact, the first. He tutored Sir Thomas More, who came up to Oxford in 1499, and about the same time he had an even more distinguished pupil in Erasmus, during his first visit to England. In 1501 he became tutor to the young Prince Arthur of Wales, while temporarily at Oxford, and subsequently he became physician to Henry VIII. This complimentary appointment brought him to London, where he resided at the Stone house, Knightrider-street, near the court at Bridewell, in the vicinity of St. Paul's, and introduced him to a London medical practice, which though limited, was in the highest circles. The routine practice of medicine was in the hands of apothecaries and quacks. In accordance with the custom of the time, Linacre was scholar, physician and priest, and was ordained by his influential patrons to a number of non-residential livings.[2] His priestly duties do not appear to have

[1] See Life of Thomas Linacre. J. Noble Johnson, 1835; and edition of Linacre's Translation of Galen's De Temperamentis. By J. F. Payne. 1881.

[2] These included Rector of Mersham in Kent, 1509; a prebendary stall in Wells Cathedral, 1509; Vicar of Hawkhurst in Kent, 1510; a canonry and prebend of St. Stephens, Westminster, 1517; prebend of South Newbold, York, 1518; precentor of York, 1519; Rector of Holworthy in Devon, 1518; Rector of Wigan in Lancashire, 1520. The Master of St. John's informs me of yet another ordination of Linacre—namely, that of Rector of Freshwater, 1520. The episcopal records of Winchester show that "Thomas Linacre, Doctor of Arts and Medicine," was instituted Rector of Freshwater in the Isle of Wight, August 8th, 1520, and resigned with a pension in 1522. The patrons at the time were the Prior and Convent of Domus Jesu de Bethlehem de Shene. In the seventeenth century the Archbishop of York conveyed the advowson to St. John's College, Cambridge.

interfered with his medical practice, his attendance at Court or his translation of Galen. Linacre's residence in Oxford, before and after his visit to Italy, extended to 21 years, and his life in London covered 23. He died in 1524 in his sixty-fourth year, and was buried in St. Paul's Cathedral, but the monument erected by Caius in 1557, and the grave itself, disappeared in the conflagration of 1666.

English Medicine in the Fifteenth Century.

Medical practice in England in the time of Linacre was Arabic in origin. The Byzantine influence had been authoritative from Bede to the Norman period, and was succeeded by Arabian doctrine until the Reformation. Jews, priests, and Franciscan friars were the leading practitioners. It was reported to Parliament in 1511 that the greater part of these practitioners had neither insight nor learning; and that "they used sorcery and witchcraft to the hurt, damage and destruction of the King's liege people, most especially of those that cannot discern the uncunning from the cunning." The plague and leprosy were the formidable diseases, both favoured by "famine pestilences" due to bad harvests. The lesser maladies of the Middle Ages had in them a large element of hysteria or psychoneurosis, so that faith came not amiss in the course of treatment. The extant leech-craft provided for consumptives, cancers, stone, gout, St. Vitus's dance, epilepsy, catarrh, ague, dropsies and jaundice, fluxes and ruptures, gout and rheumatism. The resources of surgery were few and the instruments simple, but splints were used, heat was applied by cauteries or hot bricks, and it was known how to staunch blood, extract missiles, reduce dislocations, and perform simple amputations. The resources of the native herbals were extensive and, in the sixteenth century, numerous excellent editions of these herbals were published. The physician in Chaucer was grounded in astronomy, and astrological lore played a large part in the times and seasons of treatment as well as its character. The apothecary was of long standing and an earlier representative of medicine than the physician. He was, Bullein said, the physician's cook. Yet he was not guiltless of other and worse deeds, for he was a seller of poisons. He it was whom Romeo sought—

> "I do remember an apothecary,
> And hereabouts he dwells, which late I noted
> In tatter'd weeds, with overwhelming brows,
> Culling of simples; meagre were his looks,
> Sharp misery had worn him to the bones:
> And in his needy shop a tortoise hung,
> An alligator stuff'd, and other skins
> Of ill-shap'd fishes; and about his shelves
> A beggarly account of empty boxes,
> Green earthen pots, bladders, and musty seeds,
> Remnants of packthread, and old cakes of roses,
> Were thinly scattered to make up a show." [3]

In the fifteenth century leprosy was no longer prevalent, but in September of the year in which Linacre left Oxford for Florence (1485) a strange and fatal malady, known as sweating sickness, broke out in London, believed to have been introduced by the mercenary troops of Henry Tudor's expedition landing at Milford Haven. It was like an autumn influenza and did not recur in epidemic form until 1508, then again in 1517 and 1551. It was a subject of correspondence in the letters of More and Erasmus, and Wolsey was one of its victims. It was, of course, hailed as a "new" disease as influenza and certain nervous disorders have been in our own time. The plague, the leprosy, and the sweat proved the necessity of invention of sanitation. In 1388 the first Sanitary Act ever made in England was passed by the Parliament of Cambridge. It followed the earlier sanitary ordinance of Edward III. in 1371, and was succeeded by others in the fifteenth century. Before Linacre's death it had become a national custom, initiated by royal decree, to practise notification of infectious disease, quarantine, the marking of infected houses, and scavenging and sanitary inspection. The medical profession, however, were not yet identified with epidemical observations, sanitation, or preventive medicine. Such patients as they had were among the well-to-do, who needed not public assistance. Linacre left no clinical records of extant disease, though he had ample opportunity. But the same is true of other well-known court physicians of the time. The barbers and chirurgeons were occupied with their lancets, the apothecaries with their alchemy and simples, and the physicians with scholastic learning.

[3] Romeo and Juliet, V., i.

The Domination of the Arabs and Schoolmen.

When Linacre returned from Italy, English medicine was dominated by the Arabic interpretation of science. It was introduced to England not later than the twelfth century by the Jews and by Arabic medical writings, the principal authors of which are familiar to us in the catalogue of the library of Chaucer's physician.[4] Sir Norman Moore has told us that the Arabian medical writings were used also in Ireland in the fourteenth and fifteenth centuries; and Henry VIII. advised Wolsey to take "the pills of Rhazes" as safeguard against the sweat. Throughout Britain it was a time of fossilised Arabism and effete scholasticism, which had remote origins. The century of Islamic invasion of the West (622–733) remains one of the wonders of the world. It started with the conversion and flight of Mahomet; by 640 the Arabs had conquered Egypt and destroyed for the second time the Alexandrian Library. Abdallah and Musa, and their followers, marched across North Africa, capturing the old cities of Carthaginian rule; by 710 Tarik had invaded Andalusia; within 20 years the Moors, having possessed the land of Cordova and Seville, advanced over the Pyrenees to Carcassonne, Narbonne, Avignon, and to Toulouse and Bordeaux; only at the gates of Tours were they stopped by Charles Martel in 733. If he had failed, the history of Europe would have been very different.

Indeed, as it was, the Arab invasion was so penetrative that Jewish and Arabian influence became greater and more insidious even than the march of the Saracen hosts. From the year 750 the Eastern Caliphate flourished for 500 years and the Western, beginning at the same time, for almost as long. In the reign of both, Arabic learning became dominant. It had established itself as the vehicle and channel of Byzantine Greek medicine, which it derived from its ability to assimilate the Syrian and Jewish medicine of the Nestorians.[5] First Gondisapor and then Bagdad, took the place of Edessa—the original Nestorian medical centre before 489—as the principal medical schools of the East and the influence of the great Arabian physicians, Rhazes of Bagdad, Ali Abbas, and Avicenna of Bokara, spread wherever Arabian arms had won supremacy. The Canon of Avicenna became in East and West the text-book of medicine, carrying within its covers an inadequate and miscellaneous account of the learning of Hippocrates and Galen. The University of Cordova was founded in the eighth century and became the Bagdad of the West. Of its leaders Abbucasis translated for Europe the works of Galen and Rhazes, and Avenzoar and Averroes those of Aristotle. The schoolmen of the Middle Ages carried on the tradition. The trouble was that the tradition itself was fallacious. The learning had come through Greek, Syrian, Persian, Arabic, and Latin, and in its translations and retranslations had suffered almost as much as by its Arabic transmutation.

The Arabs brought something of their own. We must not forget, for instance, that the first-hand clinical accounts of small-pox and measles were made by Rhazes in the eleventh century and introduced en bloc into the Western medical literature. The

[4] Peter of Wimbledon, physician to Henry III.'s Queen, Reginald de Stokes of Oxford, Roger Bacon himself, John of Gaddesden and his Rosa Anglica, Bernard of Gordon and his Lilium Medicina, Gilbertus Anglicus, the author of the Compendium, John of Burgoyne (the Sir John Mandeville of Chaucer), John Arderne, the Newark surgeon, John Mirfield and his Breviarium Bartholomei, John of St. Giles, who studied at Montpelier, and was the friend of Grosseteste, were among the exponents of Arabian Medicine in England.

[5] Gibbon's Decline and Fall of Rome, chaps. xlvii. and lxvi.; and Arabian Medicine. D. Campbell. 1926. Vol. i.

Arabs also brought their alchemy, their experiments, their laboratory, their mathematics, optics, and astronomy, their exceptional faculty of deduction, their immense love of learning—all these things enriched their Greek acquisitions. But the acquisitions were overlaid with false conceptions of disease, with a superfluity of drugs, with astrological forecastings, and with their deep and inherent religious dogma, and in this way both the Greek form and its spirit were lost. Thus it came about that Hippocrates was forgotten, Galenical doctrine became a static dogma, and Aristotle was mistaught. Aristotle, the son of a physician, had been the father of biology as well as politics. He first laid down the rule and practice of observing Nature and following her ways. He became, as Dante said, "the master of those who know." He not only based his natural studies on embryology and rendered accurate records of what he found, but he first sought to formulate a basis for devising some laws of nature, on biogenesis, on development, and on physiological division of labour. He was free from magic and speculative "ideas," and eschewing that which was unmeasurable became a "realist." He conceived the universe to be a cosmos. Holding fast by the rules of logic and keeping close to the facts of actual experience, he reached positive results, verifiable by observation and experiment. Dealing with the individual organism, as Hippocrates had dealt with the individual patient, he conceived a system of organic development. Though taught by Plato he avoided teleological or supernatural explanations, and thus led men's minds to naturalism.

The principal Arabic translator of Aristotle was Averroes, of Cordova, whose labours in the twelfth century set a standard which covered Europe. He was known as the Commentator, and his "Colliget" was written about 1190. But the standard was not purely that of Aristotle, but an Averroistic interpretation of Aristotle. For Averroes had been reared in the doctrines of Islam, and interpreted the data of Aristotle from the Mohammedan point of view, derived from the sects of Islam, wholly antithetical to Greek philosophy, and without apprehension of rationalism. Averroes stands therefore always midway between the theology of the schoolmen and the philosophy of the Greek. He summed up his dogma in two cardinal doctrines, the eternity of matter and the world (as distinct from the common belief that the world was about to end) and the theory of the intellect. "The first thing created by God," says the Koran, "is intelligence," and by this term Averroes meant the soul or anima. Renan summarised Averroes for us by saying that he believed in "the eternity of matter; the evolution of the seed by latent force; God infinite and indefinable; laws, nature, necessity, reason; the impersonality of intelligence; the emersion and reabsorption of the individual man after death."[6] It was Omar Khayyam who said:—

> "I sent my Soul through the Invisible,
> Some letter of that After-life to spell:
> And by and by my Soul return'd to me,
> And answer'd 'I Myself am Heav'n and Hell.'"[7]

There is much in Averroes, both ancient and modern, that has stood the test of time, but the denial of human immortality divorced him from Islam as completely as his quasi-rational basis of nature and the eternity of the world separated him from the schoolman of Europe. He died in 1206 no man's friend, for Averroistic Aristotelianism unwittingly confused and misdirected the stream of new thought which Aristotle had originated. Aristotle had found some support in Padua and the Venetian States, but none in the Platonic Academy at Florence.[8] Before the dawn of the Renaissance Florence and Venice represented the two poles of scientific philosophy as of art in Italy. Florence swung in favour of ideals of art and of platonic speculation and philosophy, Padua and Bologna in favour of analysis, rationalism, and the naturalism of Aristotle. Averroes sought to combine both of them, and the schoolmen's transmutations of the Commentator misled Western medicine for 300 years.

But the Aristotelianism of Averroes was but half the problem faced by Linacre and the Oxford Reformers. For there was also scholasticism. It was in the thirteenth century that the English universities first arose, and the impulse created by the Crusades was diverted to the spread of learning. "The long mental inactivity of feudal Europe," said Mr. J. R. Green, "broke up like ice before a summer's sun. A new power had sprung up in the midst of a world as yet under the rule of sheer brute force." The new spirit led to "the great divide" in European scholasticism. The fundamental problem of scholasticism had been the objectivity versus the subjectivity of matter. Those who stood for the former were *realists*, those for the latter were *nominalists*, and for 200 years the battle of words between them had waged fiercely.

> "Myself when young did eagerly frequent
> Doctor and Saint, and heard great argument
> About it and about; but evermore
> Came out by the same door where in I went."[9]

But the emergence of Aristotle's science in Western Europe through the medium of the Arab translators was revolutionary. Until the beginning of the thirteenth century Aristotle had been known to the schoolmen only by his logic. From the advent of his science sprang a new impulse, and the ascendancy of the schoolmen of the early scholasticism, Roscellinus Abelard, and Peter Lombard gave way to that of the later scholasticism of Albertus Magnus and Thomas Aquinas the Dominicans, and of Ockham, Duns Scotus and Roger Bacon, the Franciscans. Too many of the translators of Aristotle had an imperfect knowledge of Greek as they had of the groundwork of science. Nevertheless the Toledo school of translators and many stray reporters transmitted and magnified the work of Aristotle in the western world. Thus Roger Bacon himself was stimulated. Though a schoolman he was progressive and became a true Aristotelian, the Father of the scientific method in England. His legacy was accuracy of method, criticism of authority, reliance on experiment. He also stood for the unity of truth. "All the sciences are connected," he said; "they lend each other material aid as parts of one great whole, each doing its own work, not for itself alone, but for the other parts." Two centuries before the Renaissance he declared that the whole course of man's intellectual development was not multiple but one, not discrete or detached, but continuous and interdependent. For Roger Bacon there was no Arabic breach. The Nestorian and Mohammedan schools of science in East and West were, to him, not only channels of Greek learning, but treasure houses which enriched it. "His aim," says Dr. John Bridges, "was induction leading to deduction, in order to construct."[10]

LINACRE AS TRANSLATOR OF GALEN.

This, then, was the world of Linacre. There was the domination of Arabian medicine and there was the thraldom of the schoolmen. The fallacies of both stood in the way of progress and were awaiting reform. As we have seen, active medical practice occupied but a small part of Linacre's work after his return from Italy. Fifteen years were spent at Oxford before he removed to Bridewell about 1503, and 20 more years remained to him. Both at Oxford and in London he devoted the major part of his time to grammar and translations, and this was his first great contribution to the Renaissance. But it was not merely scholastic; it was purposive. It was designed to bring men's minds back to Aristotle. Stimulated by Barbarus, Linacre's ambition was to coöperate with Grocyn and Latimer in translating the extant writings of Aristotle direct from the Greek; as this joint task proved impracticable he assisted

[6] Averroes et l'Averroisme. E. Renan. 1852.
[7] Rubaiyat, lxvi.
[8] Science and Mediæval Thought. T. C. Allbutt. 1901.
[9] Rubaiyat, xxvii.
[10] Life and Work of Roger Bacon. J. H. Bridges. 1914.

in preparing the famous Aldine edition of Aristotle 1497, and gave himself to translations of Galen. For Galen was a medical interpreter, whose writings were already in general use and acceptance; they constituted perhaps half of all surviving Greek medical literature, and covered every branch of medicine. The Hippocratic spirit was inadequately conveyed as the teleological explanations were overdone, blemishes in part responsible for the survival of Galen's books. But Linacre was a practical reformer, and by translating Galen he saw he would give to the English medical practitioner a vade mecum of immediate value, free from Arabic mistranslation and theological bias. He selected first, on the suggestion of Erasmus and as the basis of other works which he hoped to translate, Galen's treatise on *the preservation of health*, its foundation in nature, its art, its purpose, its priority over therapeutics. Then he took up Galen's *method of healing*, which was followed by his books on temperaments, on symptomatology, on the pulse, &c.[11] Thus he was responsible for six important works of Galen, that on the temperaments printed at Cambridge in 1521 being one of the first books printed here, and possibly the first in Greek type. Linacre was grammarian, humanist, priest, and scholar-physician rather than practitioner of medicine, and he used the printing press, as Albrecht Dürer used his engraved blocks, to cover Europe with his ideas. By this means he taught as grammarian the exact use and connotation of words, took men back to the original sources of scientific literature, and silently appealed for the use of reason instead of mere authority. Though his lesson-book on grammar prepared for Dean Colet's school at St. Paul's failed to meet with approval in England, and his translation of the "Sphæra of Proclus," the Alexandrian neoplatonist, was little more than a curiosity, his scholarly translations of Galen changed the direction of the schoolmen and countered the effect of the Arabian domination. They were more valuable than the Arabian translations, less petrifying and static, more inspiring and potential, and destined to open the new book of the science of anatomy and physiology. Galen himself was less Galenical than the Arabs had made him, and Linacre's translations removed the reproach which medicine derived from the blemishes of its Arabic form and contributed to the introduction of the Hippocratic spirit. Haller attributed the advance of human anatomy in the sixteenth century to the revival of humanistic learning and the invention of printing. Within a generation after Linacre's death the whole conception of human anatomy and physiology had changed in the medical schools of Europe, and your own Charles Creighton in his classic "History of Epidemics in Britain" said that such translations as those of Linacre opened the way a century later to the standard clinical contributions of Willis, Sydenham, and Morton. Linacre's aim was to revive medicine with Greek learning from its pure source in the same way as literature and philosophy was reviving from the Renaissance of the classics. Inspired at Florence as a Platonist, he became the forerunner of Aristotelian medicine in England, and the principal initiator of the scientific movement which was the turning-point in modern medicine.

Foundation of the College of Physicians.

But the turning-point could not be reached only by translations of ancient learning. New learning must be acquired, a new orientation of English medicine other than Arabic must be established, a new spirit such as had awakened Italy must be sought and found. Though a generation had passed since Linacre returned from Florence and Padua, he had not forgotten the energising effect of the close personal contact with great minds, nor could he ever escape from his own profound conversion of mind and heart, a transformation which had been steadily confirmed by the passage of events. The world itself was larger. Since Linacre was in Italy, Columbus had discovered America, Vasco da Gama had rounded the Cape, Ferdinand had driven the Arabs from Granada and the Moorish Kingdom in Spain was extinct, Luther had nailed his theses to the church door at Wittenberg, and Thomas More had published his "Utopia." We must not think of Linacre only as grammarian and humanist; he was like his friends, a man of affairs, and his business was to reform English medicine. He knew of its plight and chaos; he knew it was not a distinct profession and that medical practice was little better than an empirical, illiterate, and mechanical art; having by his translations of Galen given it the means of the new learning, he set to work to devise a method for its organisation. We do not know what share, if any, Linacre had in the passage of the Medical Act of 1511, but it is certain that it stirred him to action. That Act was the second great step to medical reform after the Charter of the Barber Surgeons in 1461. It provided that no one should practise as physician or surgeon in London or within seven miles of its walls except he be examined and licensed by the Bishop of London or the Dean of St. Paul's with the aid of competent doctors of physic as assessors, and that in the provinces the duty of licensing medical practitioners should rest similarly with the Bishop of the diocese. This was better than the previous unlicensed confusion, but Linacre desired to liberate medical practice from the control of the church as well as to lead it into the paths of Plato and Aristotle and the freedom of Hippocrates. In a word, he saw that what was needed was the endowment of medical lectureships at Oxford and Cambridge, and the establishment of a central academy of medicine, which should be charged with the duty, foreseen by Frederick II. in the thirteenth century, of licensing physicians who were medically competent and whose education had been based upon literature and philosophy. This was the origin of the foundation of the Linacre lectures at Merton and St. John's for the public exposition of Hippocrates and Galen, and in September, 1518, by royal letters patent, a Charter was granted by Henry VIII. to Linacre and five other physicians for the foundation of the College of Physicians of London and for the regulation of the practice of physic in London and for seven miles round, and the punishment of offenders. Four years later these privileges were confirmed by statute and extended to the whole country. Linacre became the first President of the College from 1518 until his death in 1524; to his munificence its establishment was due, and in his house its meetings were first held.

Beside the ostensible object of providing a statutory and scientific basis for qualification in medicine the College of Physicians exerted a powerful influence on its science and art. It liberated it from the control of the Church; it exempted it from the leaden rule of orthodoxy which dominated the universities; it brought the competent medical practitioner into the learned world; it encouraged English physicians to study in the universities of Europe and brought foreign physicians into English culture; it was the first systematic plan of education prescribed in England for a faculty of medicine. Out of it great things were to come.

> "The congregated college have concluded
> That labouring art can never ransom Nature
> From her inaidable Estate."[12]

Within a century it had built for itself a comprehensive institution for scientific advancement comprising anatomical and special lectureships, a physic

[11] Linacre's published translations were as follows: Proclus de Sphæra (Aldus Manutius, Venice), 1499; Galeni De Sanitate Tuenda (Rubens, Paris), 1517; Galeni Methodus Medendi, vel de morbis curandis (Maheu, Paris), 1519; Galeni Pergamensis De Temperamentis (Siberch, Cambridge), 1521; Galeni Pergameni De Naturalibus Facultatibus (Pynson, London), 1523; Galeni Pergameni De Pulsuum Usu (Pynson), 1523; De Symptomatum Differentus Et Causis (Pynson), 1524; Rudimenta Grammatices (Etienne), 1533; De Emendata Structura Latini Sermonis (Pynson), 1524.

[12] All's Well that Ends Well, II., 1.

garden, a museum, a library, and the publication of the London Pharmacopœia for the standardisation of drugs.

The Beginnings of the British Pharmacopœia.

The letters patent granted by Henry VIII. which constituted the College of Physicians were confirmed by an Act of Parliament in 1523, which particularly provided for the supervision and scrutiny of every kind of medicine prescribed by physicians practising within the City of London and a radius of seven miles thereof. The means proposed for such supervision was that certain persons appointed by the College should be authorised to enter the premises of all apothecaries and destroy any defective drugs found there. They were to be assisted by the Warden of the Mystery of Poticaries within the City, and a few years later the College invoked the aid of the Warden of the Grocers. A hundred years later, in 1618, some of these powers were also conferred separately on the apothecaries, and this was confirmed by the Apothecaries Act of 1815. This idea of Linacre and his friends was new to English medicine, though it had ancient Arabic origins. Thus was introduced for the first time in this country the principle of pharmacological control of substances used for the treatment of disease. The records of the College show that the publication of a Pharmacopœia under its auspices was discussed in the sixteenth century; but it was not until 1618, 75 years after the Nuremberg *dispensatorium* of Valerius Cordus and a century after the foundation of the College, that the first London Pharmacopœia was issued. It was dedicated to James I. and proclaimed by a Royal Proclamation which required, charged, and commanded all apothecaries not to compound or make medicines in any other manner than that authorised. This first London Pharmacopœia included more than a thousand articles, "many of an extraordinary and even revolting character," and 900 preparations and compounds.[13] The ancient pharmacopœias of the College of Physicians were the forefathers not only of the modern pharmacopœias, issued since 1862 by the General Medical Council instead of the College, but they were also the parents of the famous series of Acts of Parliament which in our own time have dealt with the sale of food and drugs, the regulation of pharmacy and poisons, and the subsequent control of foods, dangerous drugs, and therapeutic substances. The Therapeutic Substances Act, 1925, and its Regulations passed by Parliament last year, which for the first time provide for the standardisation of biological as distinct from chemical drugs, are the direct and youngest descendant of the first Pharmacopœia of the College of Physicians, which arose out of Linacre's far-seeing though primitive supervision of the drugs and medicines used by physicians and apothecaries at the time of the Renaissance.

The private library of Linacre was the nucleus and foundation of the College library which became the repository of many precious legacies from William Gilbert, Matthias Holbosch, Sir Theodore Mayerne, Lord Dorchester, Selden (who left his Arabic medical manuscripts), Elias Ashmole, Matthew Baillie, Harvey, and others. It became a storehouse of the literary masterpieces of medicine, and though much was destroyed by the Fire of London in 1666, much remained.

The "Anatomy Lectures" were delivered on the Italian model from an early period in the history of the College, and about the middle of the sixteenth century dissection of the body was performed. The annual Harveian oration exhorting the Fellows of the College "to search and study out the secrets of Nature by way of experiment, and, for the honour of the profession, to continue in mutual love and affection among themselves," began in 1656, the year before that of Harvey's death. It was established and endowed by Harvey, was to be accompanied by a feast, and in after days became in large degree commemorative of Harvey himself. The Lumleian surgical lectureship was first established by Lord Lumley and Dr. Richard Caldwell in 1581; the Goulstonian lectureship in pathology in 1635; and the Croonian physiological lectures began in 1749.

[13] Munk's Roll of the College of Physicians, iii., 371–392.

Linacre's Early Successors.

More germinal than the actual achievements of the College has been the Greek spirit it embodies. Linacre was not himself an investigator or research worker, but he was the introducer of the spirit of the Renaissance to English medicine, and he designed his College for its growth and cultivation. During the last few years of Linacre's life there was a Fellow of Corpus Christi, named Edward Wotton, who followed in the footsteps of Linacre in the study of Greek at Oxford and medicine at Padua. He became President of the College in 1541 and was the first of the English physicians who applied themselves to the Aristotelian principles of biology. Gesner and Haller spoke well of him, and his text-book was the first printed book on zoology by an Englishman. It contains much from Aristotle and Pliny. There followed him in the presidential chair Dr. John Clement, Cardinal Wolsey's Professor of Greek at Oxford. He had been brought up in the household of Sir Thomas More, to whose children he was tutor. Like Sir William Butts, Dr. Chambre, Dr. Fryer, Dr. Huicke, and Dr. Owen, who became distinguished Fellows of the College, he was associated with the court of Henry VIII. and carried on the Linacre tradition. The essence of that tradition was embodied also in John Caius, of this University, who qualified as M.D. at Padua in 1541 and became Professor of Greek there for two years, being paid by noble Venetians to discourse upon Aristotle. He was a zealous collector of Greek manuscripts in Italy, and modelling himself on Linacre he was a translator of Galen, an editor of Celsus, and one of the first classical scholars in Europe. When at Padua he lived for eight months with Vesalius and caught from him his great method of anatomical teaching, which Caius first introduced into this country by his lectures in the hall of the Barber Surgeons shortly after his return from Italy. He was also, in one respect, a clinical observer as well as anatomist and naturalist, for he wrote the first account of the sweating sickness of 1551 from his experience of the outbreak at Shrewsbury. He was the refounder of Gonville Hall as Gonville and Caius College, of which he became Master in 1559, and he built the four College gates of Humility, Virtue, and Wisdom, which led to that of Honour. For nine years he was President of the College of Physicians. "The effects of Linacre's teaching," wrote Sir Norman Moore, "are shown in the life of Caius. Both men in their humility, their love of learning, their public and private generosity, are examples which have affected English physicians ever since."[14]

When Caius was living with Vesalius at Padua there was born at Colchester the man who is described by Lord Bacon as "the father of experimental philosophy" in Britain. This was William Gilbert, the illustrious author of "De Magnete." He had studied, like Linacre, in Italy for two or three years. He was a Fellow of St. John's, an M.D. of Cambridge, and became physician to Queen Elizabeth. He employed the leisure from his London practice in investigation into what he called "electrics," a property not only of amber, but of glass, rock-crystal, diamond, sulphur, and sealing-wax. This was the beginning of the use of the term "electricity" and the scientific foundation of magnetism which had been known since the thirteenth century. In 1600 he was President of the College and in the same year published his famous book of inductive philosophy, which records his numerous experiments and discoveries over 18 years. The reading of this book turned Galileo's mind to magnetism. A legacy in Gilbert's will showed his devotion to the College:—

> "Item. I geve to the Colledge of Phisitians in London all my bookes in my Librarye, my Globes, and Instrumentes, and my cabinet of myneralles,"

[14] The History of St. Bartholomew's Hospital, 1918, ii., 407–420.

and in a parting legacy he remembers its Fellowship too—

"Item. I geve sixe poundes thirteen shillings foure pence the next quarter daye after my deathe to be bestowed by the Treasurer of the Colledge to make them a dynner." [15]

The greatest ornament of the College of Physicians and of English medicine also hailed from Cambridge, for William Harvey was at Caius College in 1593. Like Linacre he had spent his school days at Canterbury, and like him he took his degree at Padua (1602). He was physician to St. Bartholomew's Hospital and physician to the King. In 1615 he was appointed Lumleian lecturer at the College of Physicians, and his autograph notes of his first lectures in 1616, six days before Shakespeare died, are in the British Museum. They show not only the width of Harvey's classical knowledge, but also contain his first pronouncement of his discovery of the circulation of the blood, which was subsequently published in his immortal book, "De Motu Cordis" in 1628. He conquered envy in his life time, as Hobbes said, and lived to see his new doctrine established. He was a munificent supporter of the College to which he was devoted and to which he left his library.

Linacre, Clement, Wotton, Caius, Gilbert, and Harvey represent the kind of learning and the spirit of inquiry for the advancement of which the College of Linacre was founded. In the first century of its existence it brought together in a unified integration the constituent elements of the science and art of healing, the exposition of which was subsequently exemplified in Linacre's illustrious descendants, Glisson, Sydenham, Willis, and your own Heberden. To the philosophy of the ancients the College added a wider understanding of biology and physics; it introduced the natural study of anatomy and physiology; its pharmacopœia began systematic pharmacology and therapeutics; its observant practitioners opened the doors of clinical medicine; and Linacre's College of Physicians became the sole guardian of medical learning and education in England. It was humanist in origin but forward-looking in vision; it began as a corporate fellowship, but became the great mother school of English medicine; it sprang from ancient learning, but grew into the study of Nature and obedience to her laws; it echoed back to the Greeks, but called men forward to a new time and a new birth, passing away from textual and literal form to the larger occasion of the living purpose and spirit of the great masters.

The Oxford Reformers.

As the restorer of Greek learning in England Linacre exerted a remarkable influence upon the men of his time. He had distinguished pupils and friends. On the occasion of his first visit to England Erasmus was evidently impressed with the group of men who afterwards became known as the Oxford Reformers. We all remember his letter to Fisher: "When I listen to my friend Colet," he wrote, "it seems to me like listening to Plato himself. In Grocyn, who does not admire the wide range of his knowledge? What could be more searching, deep and refined than the judgment of Linacre? Whenever did nature mould a character more gentle, endearing and happy than Thomas More's?" [16] Sir Thomas More and Erasmus, whose famous translation of the New Testament was published in 1516, were among Linacre's pupils; Grocyn, the first teacher of Greek at Oxford, who followed the Peripatetic School, and Colet, who became Dean of St. Paul's, were his colleagues at Oxford; and Latimer and Lilly also shared his Greek studies. In after days, and before More had settled in Chelsea, several of them lived near each other in the vicinity of St. Paul's and the Charterhouse, engaged in different spheres in bringing about the English Renaissance from scholasticism. They stimulated each other, shared in each other's labours, marked each other's lives. In the church and in the State, in scholarship and in medicine, the Oxford Reformers emancipated English thought. They discussed the reform of education, the amelioration of the evil social conditions of the people, the means and methods of propagating the Greek spirit in England. Their society was a Platonic academy, and out of it grew More's "Utopia." "The Utopia will be found," says Mr. Seebohm, "to be in great measure the expression of the views of the little band of friends on social and political questions." [17] It is inspired, he adds, by "a fearless faith in the laws of nature combined with a profound faith in religion." Nor was it merely a matter of confidence. Before he became Lord Chancellor, More himself had been appointed by Parliament a Commissioner of Sewers, and at his side there was the greatest living authority on the compendius hygiene of Galen. As a member of a group of practical reformers Linacre, too, brought the genius of the group to the solution of his problems. There is in his work unmistakable signs of the humane statecraft of Sir Thomas More, the Catholic religious liberty and piety of Dean Colet, the cosmopolitanism and wide learning of Erasmus. Above all, there is the inspiration of Barbarus. It would almost seem as if Linacre modelled his life on this extraordinary man whom he met so casually in Rome. Barbarus gave him a mode and perhaps a standard of life for the regular student, turned his scholarly mind to medicine, and confirmed him in the mission of Aristotle. Sir William Osler used to say that a physician "may possess the science of Harvey and the art of Sydenham, and yet there may be lacking in him those finer qualities of heart and hand which count for so much in life. Medicine is seen at its best in men whose faculties have had the highest and most harmonious culture"; and thus he says many of the greatest physicians have influenced the profession "less by their special work than by exemplifying those graces of life and refinements of heart which make up character . . . these have been the leaven which has raised our profession above the dead level of a business." [18] Of these Linacre was one. Whether it was the flower of inborn character or contracted from his brilliant friends or otherwise acquired, his personality comes down to us across 400 years with an aroma and a virility alike creative, winsome and enduring.

The Foundations of Modern Medicine.

By piecing together the scanty records which remain to us of Linacre's personality and achievements—his translations, his institutions, and himself—we shall find that like Petrarch he stood "on a frontier that divides two peoples, looking both to the past and to the future." As a humanist he followed where others had trodden. He joined with them in awakening the spirit of man to his literary inheritance. Though a medical practitioner in a pregnant time, he did not elucidate the processes of diseases; the great epidemics seemed to pass him by; he left no original work. But what he did as humanist and scholar-physician was, by adding to the heritage already there, to make possible the fuller interpretation of the Greek spirit. Though he did not himself even share in the consequent reconstruction, he laid the foundations on which we build, he sowed the seed of which we garner the fruit. "The medieval heritage of Greek science and the Renaissance heritage of Greek literature," says Singer, "proved barren of themselves. It was not until the one fertilised the other than there was real and vital growth." [19] That fertilisation was the work of Linacre and the Oxford Reformers; to carry on that work is their legacy to us. Their principal secular work which remains to us is More's "Utopia." It is almost a textbook of elementary statecraft and preventive medicine.

[15] Gilbert, Physician, Silvanus P. Thompson, 1903.
[16] The Oxford Reformers, F. Seebohm, 3rd ed., 1896, p. 115.
[17] Ibid., pp. 347–390.
[18] Life of Sir William Osler, Harvey Cushing, 1925, i., 459.
[19] The Dark Ages and the Dawn (Singer), chap. v. of Science and Civilisation, 1923, p. 149.

"None who read the 'Utopia,'" wrote Sidney Lee, "can deny that its author drank deep of the finest spirit of his age. None can question that he foresaw the main lines along which the political and social ideals of the Renaissance were to develop in the future. . . . By the precept and theory of his "Utopia," More cherished and added power to the new light." [20] His friend and preceptor Linacre was the first physician to make practicable the ideas of Roger Bacon in English medicine. He could not, or did not, himself practise them, but he implemented them within the limitations of his day; and the spirit of his institutions has expressed itself in four centuries in such way and form as to give us our present apprehension of the splendour, the amplitude, and the vast scope of the science and art of medicine.

If it be permissible to attempt a generalisation it might fairly be said that four advances in English medicine are indirectly attributable to Linacre's initial influence. In the sixteenth century the Renaissance carried with it a return to Aristotle and to Nature; the previous expansion of anatomy under Vesalius culminated in the seventeenth century in the fuller understanding of physiology under Harvey; the great naturalists and medical practitioners of the eighteenth century, of whom John Hunter was chief, brought into application the new physiology and pathology in searching for the actual causes, circumstances, and natural healing of disease; and the nineteenth century from beginning to end was the period of the organisation of the profession of medicine, both by itself and by the State, for the welfare of the Commonwealth, an organisation initiated by the College of Physicians. None of these four immense steps in human progress was narrowly confined to the period of its introduction, and indeed the twentieth century embodies them all. If we ponder upon this amazing series of events we shall find in it not only the aftermath of the Renaissance, but the philosophic basis and object of medicine itself. The fundamental purpose of medicine is not to cure disease but to prevent it. Even Linacre and Sir Thomas More knew that the future well-being of the English people lay with simple methods of prevention. Yet the practice of that prevention is still widely disregarded. "In the world of Nature," said Balzac, "the methods are very simple. It is the result that is great."

The Oxford Reformers and their successors down to Harvey seem to say to us: "Follow the Greek spirit, search out the secrets of nature, find out by the experimental method her laws, and be obedient to them." That is the true science and the only wise statesmanship. It cannot be doubted that Jenner, Pasteur, Lister, and Allbutt would have said the same. It is this mode of approach which has given us: (*a*) the return to Nature, (*b*) the application of physiology, (*c*) the new knowledge of the cause and circumstance of disease and its healing by immunity, and (*d*) the organisation of science in behalf of the survival and development of man. These, and not the particular methods of their application, are the essential principles of preventive medicine. The ways and means of its practice and organisation will be manifold and diverse; some will be discharged by the physician, some by the layman, some by the community. Our path will take us into all fields of knowledge and all spheres of human society. We shall work in Aristotle's double track of the one into the many and the many into the one.

> "It may be that the gulfs will wash us down:
> It may be we shall touch the Happy Isles."

In spite of Linacre and the greater explorers who followed in his train, we in England have been slow to learn the lesson of the Oxford Reformers that only by the growth of mind and soul is a nation great and free, only by seeking the truths of Nature and integrating them into a unity can we rightly belong to the kingdom of life.

[20] Great Englishmen of the Sixteenth Century. Sidney Lee. 1907, p. 33.

RADIUM TREATMENT IN CARCINOMA OF THE MOUTH AND TONGUE.

BY G. E. BIRKETT, *M.C.*, B.A. CAMB., M.R.C.S. ENG.,

RADIOLOGIST, MANCHESTER AND DISTRICT RADIUM INSTITUTE; HON. RADIOLOGIST, CHRISTIE HOSPITAL FOR CANCER; LATE PATHOLOGICAL REGISTRAR, MANCHESTER ROYAL INFIRMARY.

DURING my first year at the Radium Institute 127 out of a total of 565 cases of malignant disease referred for treatment were suffering from carcinoma of the mouth and tongue. At the end of the year 16 per cent. of these patients were free from evidence of either local or metastatic disease, but subsequent examination of all the patients treated showed that the results were very sporadic and that a very trying reaction usually accompanied treatment. Needless to say, most of the cases were frankly inoperable, but the same applies to the majority of cases of buccal carcinoma seen in hospital practice. About 50 per cent. of the cases referred for treatment by radium are in the last stages of the disease. Often half the entire buccal cavity is involved and the tongue absolutely fixed, whilst metastatic deposits, also frequently fixed to the great vessels, are found on both sides of the neck. At the moment no attempt is made to treat this type of case.

Evolution of Technique.

In taking charge of treatment at the Manchester and District Radium Institute two and a half years ago I felt, therefore, that the problem of the treatment of this variety of malignant disease was a fairly pressing one. There seemed to be no doubt that a number of cures could be obtained, but with the methods in use results were uncertain. In an attempt to arrive at some common principle the records for a period of ten years were examined. The cases were under the care of Dr. Arthur Burrows. It was found that 51 out of a total of 812 cases were well for periods of time varying from one to nine years. It was impossible to compare the results with those of surgery, as practically all the cases were surgical rejects, but the fact that radium could accomplish that which surgery, with its comparatively perfected technique, could not, was impossible to ignore. The main point of the investigation was that in 80 per cent. of these apparent cures the method employed had been that of burying small, unscreened emanation tubes or seeds in the primary growth. These tubes are left in situ and are probably effective for about 14 days. Both β and γ rays are employed, but the common factor is a comparatively small dose per unit of application continued for a long period of time. The other methods previously employed consisted in the implantation of screened tubes for periods up to 24 hours. The tube strength varied from 10–12 millicuries per linear centimetre, and the screening from 0·3 mm. of brass to 0·3 mm. of platinum. The former screen allowed far too much β irradiation to pass through, and often caused a very painful and distressing reaction. The same criticism applies to the unscreened method—only more so. On the other hand, the method did produce results and, if the end justifies the means, can be condoned. It had a great vogue in America.

About the same time Régaud,[1] in a paper read before the first International Congress of Radiology in London, referred to results in carcinoma of the tongue which were frankly brilliant and, although I have not had the opportunity of seeing his work, I should like to pay tribute to him as a pioneer in this subject. He applied the principle of prolonged irradiation with a buried tube technique, but avoided the disadvantages of sloughing and necrosis by heavy filtration—viz., 0·5 mm. of platinum, which gives almost a purely γ type of irradiation. Hitherto at the Manchester and District Radium Institute emanation only had been used, but in view of the possibility that it might be better to use a source of irradiation of constant strength, two series of tubes containing radium

element were employed. In order that variation in screening could subsequently be obtained if necessary, removable platinum cells containing radium sulphate were employed. They measured 16 mm. in length and had a wall thickness of 0·2 mm. of platinum, and contained respectively 1 mg. and 2 mg. of radium element—i.e., 0·62 mg. and 1·25 mg. per linear centimetre. The cells were contained in pointed platinum needles, with removable screw caps, 29 mm. long and with a wall thickness of 0·4 mm., giving a total screenage of 0·6 mm. of platinum. This ensures a completely γ type of irradiation. The average period was 8–10 days, but as long as 14 days has been given. Where emanation was employed instead of radium element an initial strength of 2–2·9 mc. for the same length of tube, or a linear intensity of 1·25–1·80 was adopted. It must be remembered, however, that radium emanation tubes lose strength at roughly the rate of one-sixth per day. At the end of a week the linear intensities would therefore be 0·35 and 0·50 respectively. Thereafter the curve representing this decay flattens out considerably and approaches the horizontal.

The disadvantages of emanation, as compared with radium element, are obvious. Once measured and put in a sealed container, the strength of a tube containing radium element does not vary appreciably, at any rate during a lifetime. It therefore ensures a certain strength and a constant intensity of irradiation. At centres where large numbers of tubes are being used, the use of emanation requires constant measurement if accuracy of dosage is to be obtained; this means increased danger to the personnel, both from the general and the local effects of radium. A higher initial strength of tube must also be used, which increases the risk of tissue necrosis. Régaud has stated that it is an advantage to use a gradually decreasing intensity of irradiation, but I fail to see why this should be so, nor can I adduce any evidence from my experience. The great advantage of emanation is a purely financial one. If a tube of emanation is lost, then only the value of the screen need be taken into account.

In this article the sites treated comprise the buccal surface of the lip and cheek, the floor of the mouth, tongue, fauces, tonsil, and hard and soft palates. It is easy to insert and retain tubes in all sites save the hard and soft palates; the type of tube referred to above is definitely unsuitable for these sites.

There is no such thing as a "dose" in carcinoma of the mouth. The number of tubes used depends upon the size and extent of the lesion and is a matter of experience. Under a general anæsthetic the lesion is usually found to be more extensive than would have been expected from the clinical examination, and it is as well to remember this in ordering the tubes. As Régaud [1] says, failures are mainly due to an inadequate recognition of the probable extent of the primary lesion rather than to an absence of effect, and this accounts for the majority of recurrences at the primary site. As far as possible tubes are implanted in the growing edge of the tumour, but where the lesion is a very large one they are also buried in the tumour itself. The tubes are placed about one centimetre apart. Ligatures should embrace healthy tissue where possible, otherwise they tend to cut through prematurely.

Anatomical and Pathological Considerations.

The problem as a whole is a complex one, and it is impossible to refer to more than general principles. Implantation of screened tubes is adopted for the primary site, but there remain the lymphatic nodes and the intervening lymphatic tracts between these and the primary growth. Spread can occur either by permeation, by embolism, or by both. If spread is by permeation then treatment must be directed to all three zones, but the view generally held is that metastasis is usually embolic, in which case the main problem is the primary site and the lymphatic gland area only. Once the disease has reached the lymphatic gland area the field is much wider, as it is impossible to foretell accurately which group of glands will be affected. Broadly speaking, metastases from the floor of the mouth and the anterior third of the tongue will be in the submental, submaxillary, and upper deep cervical groups of glands; from the fauces, tonsil, and middle third of the tongue in the submaxillary and upper and lower deep cervical groups, and from the base of the tongue in the upper and lower deep cervical groups. When a lesion has crossed the mid-line infection of one or both sides can occur.

The ideal method would be an external application which would cover the whole of the lymphatic drainage area on both sides of the neck, but unfortunately no uniformly satisfactory technique has as yet been developed, and most experienced workers still rely on surgery combined with irradiation where the glands are palpably involved. In quite a number of early cases no metastasis occurs, and prophylactic irradiation can be given by means of external applicators for periods up to three weeks. This method has not been employed to any extent at this centre, owing to restricted facilities. A careful system of examination at monthly intervals is adopted and, if glandular enlargement occurs, a block-dissection combined with implantation of radium is carried out. The alternative procedure is implantation of tubes on the same lines as for the primary lesion, but the surgical exposure necessary to implant in all the possible sites of spread is so great that a block-dissection might as well be done.

In a few cases in which the primary growth has resolved, and in which the glands have been too fixed for surgical removal, implantation has been resorted to, with comparatively good results. It is felt, however, that in these cases metastasis must have been limited to the palpably enlarged glands, and at present I would only recommend it in inoperable cases and in cases in which the condition of the patient rendered a very extensive dissection inadvisable. The block-dissections carried out are thorough, and include the removal of the internal jugular vein and the sterno-mastoid. As an onlooker and assistant at this procedure I am convinced that the routine removal of these structures accelerates the operation, gives greater access, and accomplishes a more thorough clearance of both anterior and posterior triangles than any effort to preserve them. When this operation is completed 8–12 tubes, containing about 6 mc. of radium emanation and screened by 0·8 mm. of platinum, are implanted in the wound, concentration being directed usually to the area deep to the parotid and angle of the jaw, and to whichever gland-bearing area is most likely to be affected. The silk threads attached to the tubes are brought out at the lower end of the cervical incision, and act as excellent drains. They are removed in three to four days' time. The primary lesion has invariably been dealt with in the first place.

A number of workers, including most of the French school, advocate the treatment of the lymphatic area before the primary lesion, either by dissection followed by prolonged external irradiation, or by external irradiation alone. They do so on the ground that the presence of radio-active sources in the mouth may have a stimulating effect on distant deposits in the lymphatic zone; it is a widely held theory that irradiation which is effective over a small area only may have a stimulating effect on outlying parts. I can, however, only recall two or three cases in which this seemed probable, and other causes may have been operative. From a surgical standpoint it is obviously better to deal first with a source of sepsis, and from a pathological standpoint with what must always be a source of malignant emboli.

Diagnosis.

By far the largest number of cases of carcinoma of the mouth and tongue are seen in men—97 per cent. in my own experience—and the persistence of any form of ulceration in the mouth for more than a week or two in a patient over 30 years of age should arouse a strong suspicion of malignancy. The result of a Wassermann reaction is rapidly obtained with the

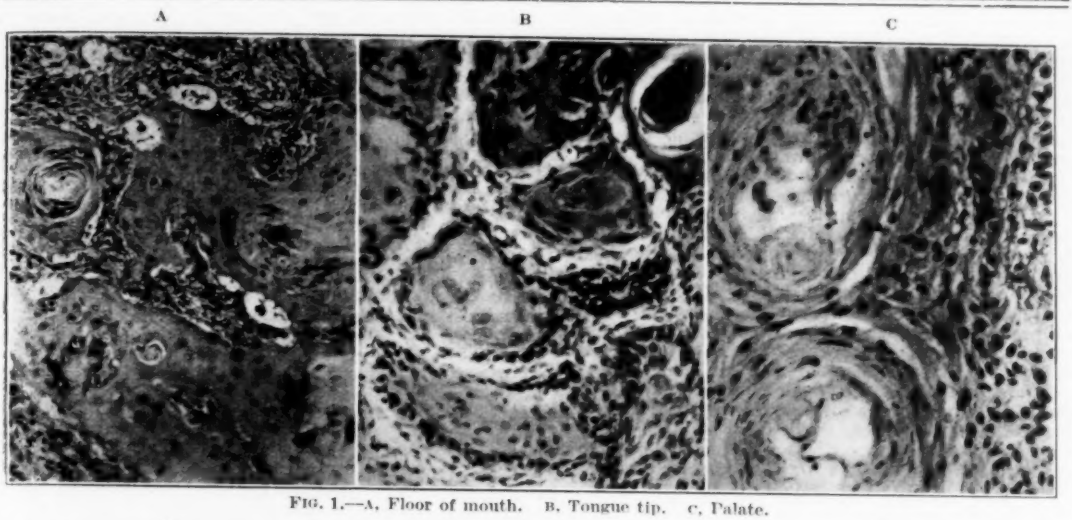


FIG. 1.—A, Floor of mouth. B, Tongue tip. C, Palate.

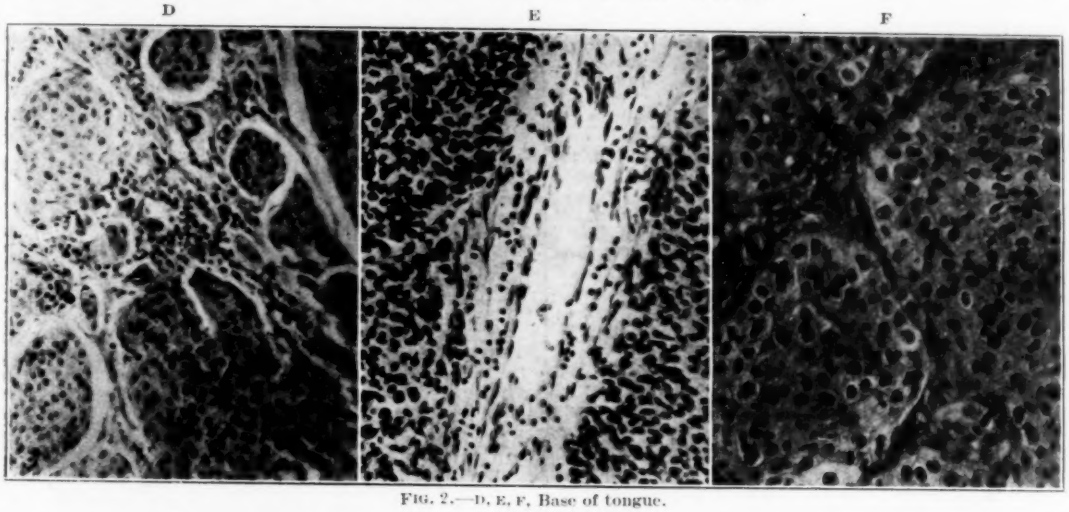


FIG. 2.—D, E, F, Base of tongue.

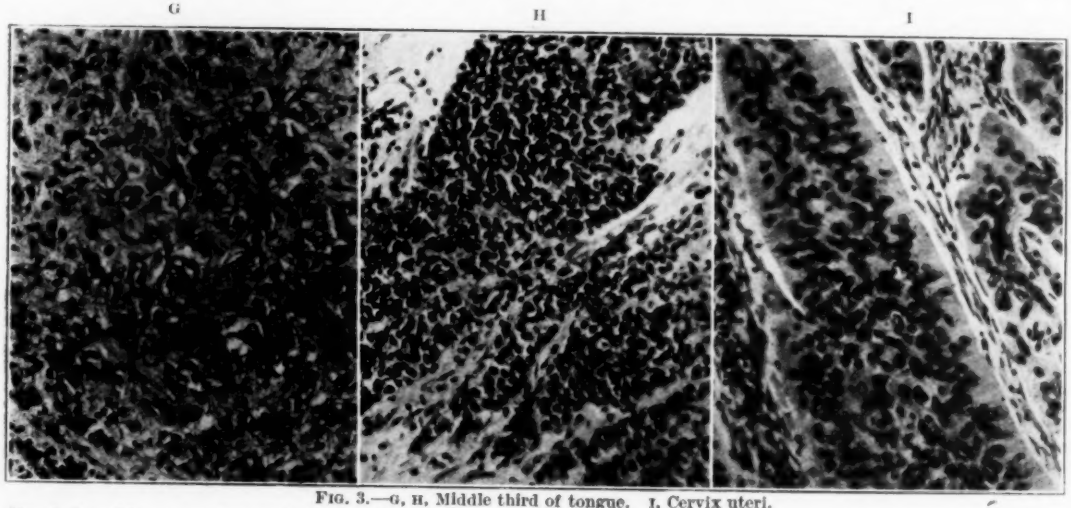


FIG. 3.—G, H, Middle third of tongue. I, Cervix uteri.

Figs. 1, 2, and 3 are microphotographs showing the variability in type of squamous epithelioma ta met with in the buccal cavity in different sites. A typical section from a case of carcinoma of the cervix uteri (Fig. 3 I) is included for comparison with those of the base of the tongue. Both are undifferentiated in type and radio-sensitive. In all cases, save that from the cervix, sections were taken from the secondary deposits in the neck.

facilities available in these days, whilst a tuberculous ulcer is usually secondary to a fairly obvious pulmonary lesion. I condemn wholeheartedly the removal of a piece for section as incomplete surgical operations in malignant disease tend both to accelerate local growth and to favour metastasis; very few surgeons would incise a cancer of the breast without proceeding immediately to a radical amputation.

Naturally a surgeon must be absolutely sure of his diagnosis before performing a hemi- or complete glossectomy, but radium treatment is a conservative method which causes little or no impairment of function. To the criticism that one should hesitate to perform block-dissection unless the exact nature of the primary lesion is known, I reply that the majority of patients are elderly and that, unless palpable glands are present, a conservative and expectant attitude is actually adopted. The persistence of palpable glands after the disappearance of the primary lesion is sufficient ground for the surgical operation, and these glands usually afford positive evidence of malignancy. The use of two divergent methods of treatment for the same condition—viz., radium for the primary lesion and surgery plus radium for the lymphatic area—is justified by the following facts. By virtue of its position cancer of the mouth is rarely capable of wide excision. On the other hand, metastasis occurs along a system, so to speak, of pipes and cisterns. Before the walls of this system have been invaded it should be an ideal field for surgical treatment, so long as spread is embolic and not by permeation.

Histology.

Broadly speaking, carcinoma of the mouth and tongue is a squamous epithelioma, and the usual impression given by text-books is that it is well differentiated with an abundance of cell nests and epithelial pearls. Clinically, however, impressive results were obtained, on the primary site, at any rate, in a group of cases in which the lesion was localised at the base of the tongue. From the point of view of accessibility and visibility this is the worst site in the mouth, and it is difficult to suture or implant tubes here. Yet seven out of ten primary lesions resolved, which was much the best percentage figure obtained for any site. As sections from the primary site are not taken only three cases have been examined, the material having been obtained from the glands removed. In each of the three cases sectioned the slides show a highly cellular, undifferentiated type of growth with no cell nests or epithelial pearls, closely resembling carcinoma of the cervix uteri, which is also highly radio-sensitive (Figs. 1, 2, and 3). Ewing's "Neoplastic Diseases"[3] states that "embryonal forms of epithelioma arise in the base of the tongue, tonsil, and pharynx, but their exact structure is undetermined. The cells lack squamous characters and they grow in columns or in distant alveoli." Quick and Cutler[4] have recently drawn attention to a group of 14 cases of intra-oral tumours which they designate "transitional cell carcinoma." Of these 10 were found in the tonsil, 3 in the base of the tongue, and 1 in the cheek. Clinically metastasis was widespread and early, and they were extremely sensitive to irradiation. The highly responsive group at the base of the tongue in my series probably belongs to this category.

The lesions seemed to fall into three groups: (*a*) involving the tip and anterior third; (*b*) arising at the base of the tonsil, tending to involve the middle third of the tongue and spreading to the tonsil and fauces and floor of the mouth; (*c*) involving the base of the tongue.

Of 76 cases in which the tongue was involved and treated 14 were in class (*a*), 52 in (*b*), and 10 in (*c*). Two more cases in class (*a*) had been dealt with surgically elsewhere, the patients being referred for treatment of the metastases. It is of interest to note that in 8 of these 16 cases in class (*a*) there was positive and in 5 cases strongly presumptive evidence of syphilis. Although syphilis is undoubtedly an important ætiological factor in the production of carcinoma of the tongue, clinical evidence suggests that it must in the first instance produce local damage. A positive Wassermann reaction, unless a local lesion is present, does not necessarily indicate that syphilis is the causal or predisposing factor.

The histological types in the different sites were as follows:—

Tongue: Tip and anterior third: well differentiated and highly keratinised type. Base of fauces: indeterminate types—some differentiated, others undifferentiated. Base of tongue: highly cellular and undifferentiated.
Floor of mouth: Highly keratinised.
Palate: Differentiated and undifferentiated.
Cheek and lip: Highly keratinised.

Figs. 1, 2, and 3 show the variations in type and also the resemblance of a typical carcinoma of the cervix uteri to those at the base of the tongue.

FIG. 4.

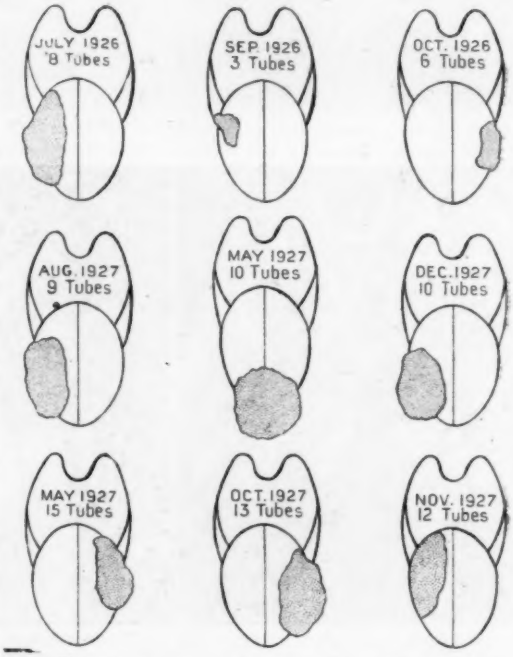


Diagram forming a key to Fig. 5. It shows the situation and extent of the primary lesion in nine cases of carcinoma of the tongue on the dates given. The photographs, taken in March, 1928, show the good functional result as judged by ability to protrude the tongue. There is no sign of local or metastatic disease in any of these cases. The number of tubes implanted gives some idea of the size of the respective primary lesions.

Reaction, Complications, and Sequelæ.

The reaction, if platinum 0·4 to 0·5 mm. is used, is not severe and is hardly noticed by the ordinary type of hospital patient. As a rule, by about the fourteenth day the treatment zone becomes coated with a deposit or adherent exudative membrane, which is best compared with the late fibrinous deposit over the pleura of a patient dead of lobar pneumonia. It is greenish-yellow in colour and is adherent, and yet it is by no means a slough. It usually disappears in about four to six weeks after treatment, when the indurated zone becomes softer, but probably three months elapse before the area treated becomes as supple and soft as the ordinary healthy tissues. Occasionally, probably from faulty distribution of tubes, tissue necrosis occurs, is accompanied by severe pain, and the formation of a depressed ulcer, covered by a tough, adherent, green slough and extremely tender to the touch. There is a surrounding zone of induration and sometimes only experience can decide whether this induration is due to the persistence of the causal factor or to an inflammatory thickening. Some of the

French school advocate protection of the bony parts, which are said to be especially prone to necrosis compared with the softer tissues. It is quite a feat of endurance to tolerate the presence of what amounts to a pin-cushion in the mouth for a week or more. A lead mould to the alveoli would increase this discomfort, and in my experience is unnecessary. Profuse hæmorrhage has accompanied treatment in two instances, but occasioned no anxiety. It was probably due to ulceration into the lingual artery.

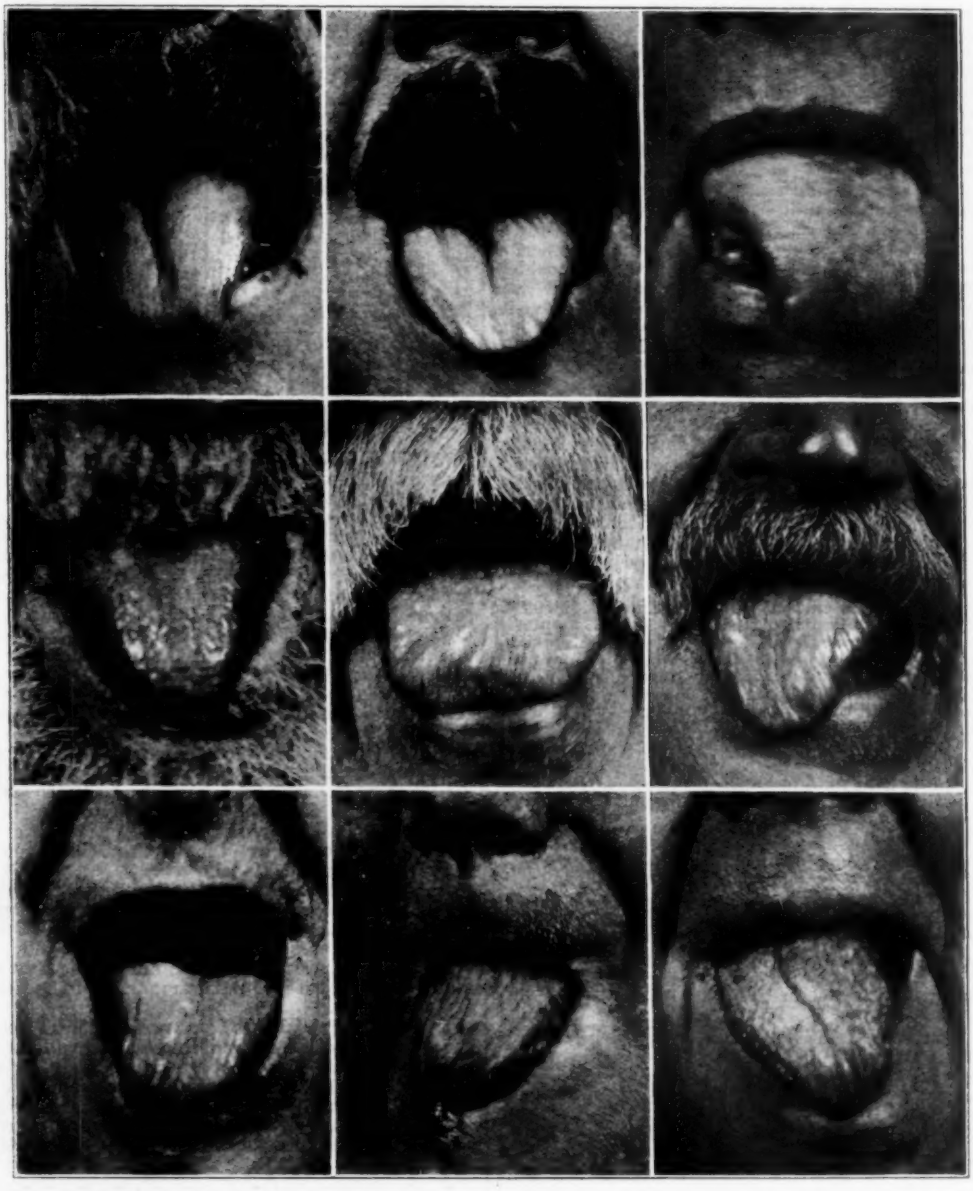
Results.

The results in the primary lesion are appended. Where a lesion involved more than one site it was included under the various headings, so that some cases appear more than once.

—	Well.	Total.	Percentage well.
Tongue	31	75	46·66
Fauces and tonsil	10	36	27·77
Floor of mouth	14	42	33·33
Hard and soft palates ..	11	36	30·50
Cheek and lip	11	26	42·0

On the whole this corresponds with the ability to retain tubes, with the exception of the floor of the

FIG. 5.



Photographs taken in March, 1928, showing good functional results. The original site of the growths, and the time at which treatment began, may be seen from Fig. 4, which forms a key to the above photographs. In each case it will be seen that the tongue as a whole is drawn over towards the side of lesion, whilst the tip is turned slightly towards the opposite side.

mouth, where bone is often involved; this constitutes a bad prognostic feature. A modification of the type of tube will probably bring about better results in the palate, fauces, and tonsil. As a rule there is very little tissue here in which to implant tubes and the sutures tend to cut through.

An analysis of the 1926 results showed that 40·8 per cent. of those whose treatments continued for seven or more days were well, compared with 22·8 per cent. of those treated for less than seven days. A minimum treatment of seven days has therefore been the aim in subsequent cases.

The results of treatment can be variously stated. Eighty cases were treated during 1926 and of these 22, or 27·5 per cent., are still free from local or metastatic evidence of disease. At the end of 1926 the percentage had been assessed at 25 per cent. In 31 cases, or 38·75 per cent., the primary lesion resolved. In 29 cases, or 36·25 per cent., there has been no evidence of recurrence at the primary site.

Seventy-four cases were treated during 1927. Twenty-six of these, or 35 per cent., show no signs of local or metastatic disease. In 34 of these, or 45·9 per cent., the primary lesion resolved. Some of the cases will probably resolve later.

Forty-eight cases treated during 1926 and 1927 are at present under observation and have no local or metastatic signs of disease. The main point is that, by means of a fairly uniform technique, or at any rate by the employment of one principle of irradiation—a small unit dose for a comparatively prolonged period of time—it is apparently possible to cure a considerable number of patients suffering from what was clinically undoubted buccal carcinoma. In 43 per cent. of these cases there was a positive histological diagnosis, chiefly obtained from secondary deposits in the neck. In an additional 16·6 per cent. of cases there was a negative Wassermann reaction. The diagnosis was purely clinical in the remaining 40 per cent. of cases.

It is impossible to refer in detail to all the successful cases, and the following one is selected for several reasons. In the first place, surgery was impossible, so that there was no question of an alternative method of treatment, except X rays and lead. Secondly, it was a very advanced case and illustrates what can be done and what may be done more frequently in the future if technique improves and experience ripens.

July 20th, 1926: Duration eight to nine months. Referred by Mr. Geoffrey Jefferson. Tongue fairly mobile, protruded to right. There was an indurated lesion with central ulceration extending from the base of the tonsil to the epiglottis and crossing the middle line, involving practically the whole of the base of the tongue. There were three hard, enlarged glands in the right side of the neck, two in the right submaxillary triangle, and one in the right upper deep cervical group. One gland in the left upper deep cervical group was enlarged.

10 Ra E = 1 Pt. 6/10 } inserted in base of
1 Ra E = 2 Pt. 6/10 } tongue for nine days.

Sept. 24th: No sign of growth in tongue.
Oct. 20th: Block-dissection by Mr. Jefferson. Sixteen radium emanation tubes of 6 mc. each, screened by Pt. 4/10, were implanted in the wound and left for four days.
Nov. 3rd: Similar procedures on left side.

8 E.T.'s = 7 each Pt. 0·8 mm. } being implanted
5 „ = 6 „ Pt. 0·5 mm. } for three days.

A section from a gland from each side of the neck showed an undifferentiated type of squamous epithelioma. The patient was well in February, 1928, 18 months after first coming under treatment.

The results are admittedly too recent to be claimed as more than apparent cures, but they are results in an inoperable type of case and they confirm the continental experience of Régaud among others, and Evans and Cade [2] in this country. Functionally considered, they are almost perfect, especially in comparison with those of surgery of the tongue. Although a good deal of selection is exercised a large number of the cases claimed as apparent cures are very advanced and absolutely beyond the hope of surgery. If, therefore, radium can effect the disappearance, even for a year, of all clinical signs of the disease it has surely a claim to consideration in the early and operable types of case, especially considering the poor results from surgery and, in the case of the tongue, the great impairment of function.

Results in 1926.				*Results in 1927.*			
Case.	Site.	Time well in months.	Treatments.	Case.	Site.	Time well in months.	Treatments.
1	Tongue.	27	1	1	Tongue, base.	14	1
2	„	27	1	2	„	15	1
3	Tongue and mouth (floor).	27	2*	3	Mouth, floor.	13	1
				4	„	15	1
4	Hard and soft palates.	27	1	5	Fauces.	12	1
				6	Cheek.	11	1
5	Palate.	24	1	7	Tongue.	7	1
6	Fauces and tongue.	24	1	8	„	9	1
7	Mouth, floor.	24	3*	9	„	10	1
8	Tongue.	20	1	10	Cheek.	7	1
9	Tongue, base.	21	1	11	Mouth, floor.	7	1
10	Palate.	21	1	12	Fauces and cheek.	11	1
11	„	22	1	13	Cheek.	7	2
12	Tongue.	21	1	14	Tongue and mouth (floor).	11	1
13	„	20	1				
14	Fauces and palate.	20	1	15	Mouth, floor.	11	1
15	Cheek.	19	1	16	Palate.	7	1
16	Palate, fauces, and tongue.	18	2*	17	Tongue.	7	1
				18	Cheek.	11	1
17	Mouth, floor.	18	1	19	Palate.	7	1
18	Tongue.	18	2	20	Cheek.	7	1
19	Palate.	17	1	21	Tongue.	5	1
20	Lip.	17	1	22	„	4	1
21	Cheek.	17	1	23	Tongue and mouth (floor).	4	1
22	Tongue, palate, and fauces.	15	1	24	Tongue.	4	1*
23	Tongue.	17	2*	25	Mouth, floor.	5	1
				26	Palate.	4	1

Cases marked * developed radium necrosis which later cleared up. It is significant that all except one of these cases had more than one application. Otherwise it is obvious that in by far the greatest number of cases the primary growth resolved after one treatment.

Future Progress.

(*a*) *The Primary Site.*—I believe with Régaud [1] that a long source of irradiation in a buried tube is preferable to a short one, and I suggest that needles employing an active length of 2·5–3 cm. would produce better results in the more advanced types of case. Apart from this I doubt whether there will be any improvement, except such as experience furnishes, in the treatment of this site. Especially for this reason I regard the percentage of apparent cures obtained in the series detailed above as much too low. Probably an attempt is made to treat too many cases with the facilities available.

(*b*) *The Lymphatic Area.*—The results from most centres are disappointing, but I intend to adopt the method of prolonged external irradiation in the radiosensitive type met with at the base of the tongue. It is apparently difficult to obtain a sufficiently intense depth-dose in the more resistant types without damaging the skin too severely. It may be that comparatively restricted facilities account for these results, and certainly the method has not been sufficiently tried in Manchester.

(*c*) *Visceral Metastases.*—Seeing how much more difficult it is to deal with the lymphatic region than with the primary lesion I can hardly conceive that visceral metastases could be treated successfully. They are, of course, relatively uncommon in this type of malignant disease and most frequent in the undifferentiated types.

I do not think that a long period of irradiation is necessarily the only useful method in radiotherapy. I believe that greater uniformity of results and better results in buccal carcinoma are achieved by it, but in some other situations, as, for instance, carcinoma of the cervix uteri, other factors must be taken into account and on occasion call for a "split" method of application.

I wish to acknowledge with thanks the help which has been freely given by the honorary surgical staffs of Ancoats Hospital, Christie Hospital, Manchester Royal Infirmary, and Salford Royal Hospital, in such

surgical work as was necessary in dealing with the lymphatic area, and in particular to Mr. W. R. Douglas, who has performed the block-dissections at the Institute. Dr. C. Powell White has kindly allowed his laboratory assistant, Mr. H. Taylor, to prepare the microphotographs which are shown.

References.

1. Régaud, Cl.: On Curietherapy of the Epitheliomata of the Tongue and of their following Adenopathy, Brit. Jour. Radiology, 1925, xxx., 361.
2. Evans, A., and Cade, Stanford: Cancer of the Tongue, Brit. Jour. Surg., 1927, xv., 55.
3. Ewing, J.: Neoplastic Diseases, 2nd ed.
4. Quick, D., and Cutler, Max: Transitional Cell Carcinoma: A Radiosensitive Intraoral Tumour, Brit. Jour. Radiology, 1927, xxxii., 425.

ACUTE RHEUMATISM IN CHILDHOOD.

By C. J. McSWEENEY, M.B. N.U.I., D.P.H.,
DEPUTY MEDICAL OFFICER OF HEALTH AND DEPUTY SCHOOL MEDICAL OFFICER, CARDIFF.

THE problem of acute rheumatic infection in children is one which in recent years has been receiving more and more attention. During 1927 the Medical Research Council and the Ministry of Health have each issued publications which deal very comprehensively with the many aspects of the question.

A subcommittee of the British Medical Association has issued two long reports [1] and contemporary medical literature is rich in references to rheumatism in childhood. The annual reports of the chief medical officer to the Board of Education have for many years dealt specially with the subject of rheumatism, and the current issue [2] just published is no exception. That this problem has become a matter of general concern is obvious from the references to rheumatism which are to be found in the annual reports for 1926 of many school medical officers throughout the country. There is general agreement that rheumatic diseases contracted in childhood are responsible for a very large number of deaths every year. G. A. Allan [3] and A. P. Thomson [4] say that half of the 60,000 deaths from heart disease which occurred in England and Wales in 1924 were of rheumatic origin. Carey Coombs [5] is of opinion that all deaths from heart disease under 40 years of age may be ascribed to rheumatism. It is very probable that at least 25,000 deaths occur annually in England and Wales from cardiac disease following upon acute rheumatic disease—a figure exceeded only, in years when influenza is not epidemic, by cancer and tuberculosis. Whilst the results of juvenile rheumatism are generally recognised, there is not the same measure of agreement concerning the relative significance of various factors in the production of the disease. Thus the Medical Research workers [6] found that an unhealthy state of the tonsils was not an essential factor in the production of juvenile rheumatism and that tonsillectomy was no guarantee of immunity to rheumatism. It is important to remember that these findings were based on an investigation which included a large control series of observations made on non-rheumatic children. The B.M.A. subcommittee's report, on the other hand, considers the disease as essentially associated with tonsillar sepsis and alleges that permanent heart trouble never develops after tonsillectomy. The Medical Research Council's inquiry found that dampness was only slightly more frequent in the houses of rheumatic children than in those of the control series, whereas the B.M.A. report stresses the importance of this environmental factor in the causation of the disease. Direct contagion is not discounted as a possible factor by the Medical Research Council workers who produce figures consistent with the theory of infectivity, but the B.M.A. subcommittee definitely regard this factor as being of no practical importance. It is clear that any further investigations among rheumatic children carried out with the object of elucidating this aspect of the problem must be balanced by a series of observations relating to a similar group of non-rheumatic children.

Rheumatism in Cardiff School-children.

During 1927 a special inquiry was made into the factors associated with rheumatic infection among Cardiff school-children. Cases for investigation were selected from the current departmental records, there being referred for special examination all cases: (1) in which cardiac disease existed or was suspected; (2) suffering from or giving a history of rheumatic manifestations; and (3) whose recent or remote absence from school had been medically certified as due to a rheumatic manifestation. Obviously the first selection included many cases of congenital cardiac disease, habit spasm, functional disorders, &c., but it was considered wise to spread the net as reasonably wide as possible. The result was that out of 400 or 500 children specially gathered in this way some 214 were found to present positive and unequivocal evidence of rheumatic infection.

For the purpose of this inquiry the mere mention by the parent of growing pains was not accepted as evidence of rheumatism. Only definite prolonged or repeated pains in limbs were so regarded. The choreas had been observed and recorded by a medical officer, the heart condition had been detected at school inspection or clinic, rheumatic fevers had been certified by a private practitioner and corroborated by the existing sequelæ. Any case which showed only one factor which in itself was doubtful was excluded from the present survey. Yet it would be very unwise to restrict our conception of rheumatic disorders in childhood to the cases showing unequivocal clinical signs. In every affection all grades of severity are met with, and it is conceivable that some cases of mild rheumatism showing no clinical signs at the moment of examination were excluded from this inquiry. Reference to Table I. will show how few were the manifestations of this infection which came once and not again. One of the most striking, though not unexpected, results of this inquiry is the tendency shown by rheumatism to recur in some form or other.

A control group of children were also examined. These unfortunately were limited as to numbers by a sudden emergency, but it was possible to examine 116 who had no evidence of rheumatism and who had not any affection of the heart. These children were selected at random and were all of school age. In addition to very full inquiries into the personal and family history of both rheumatics and controls their houses were visited by sanitary inspectors who, to avoid bias, were not informed of the association of the houses with this inquiry. Among other things, detailed knowledge was thus obtained as to the extent, nature, and cause of dampness in the houses both of rheumatic and control cases.

General Symptomatology.

The rheumatic manifestations observed were classified under the following heads—viz., Rheumatic Pains, Rheumatic Fever, Chorea, Rheumatic Carditis, Arthritis, Erythema Nodosum, and Other Manifestations. Of the 214 rheumatic children examined 133 had rheumatic pains at some time or other, 65 had rheumatic fever, 129 had rheumatic carditis resulting in permanent valvular disease, 44 had rheumatic carditis which had not at the time of examination led to permanent valvular disease, 9 cases showed erythema nodosum, and 27 cases showed arthritis. A distinction is made throughout this report between permanent valvular disease and other forms of rheumatic cardiac involvement. The latter group relates to cases where definite cardiac mischief is manifested by impairment of the heart's sounds, but where sufficient evidence is not available to show clearly that the lesions are permanent.

Rheumatic Pains.—Apart from cardiac involvement this was by far the commonest rheumatic manifestation shown. Seventy-nine children started their rheumatic troubles in this way and most of the children examined had rheumatic pains at one time or another. The pains were more often experienced in the legs than in the arms and were by no

means related to the joints in all cases. A stiffness of the muscles and joints was very common.

Rheumatic Fever.—Fifty-five children had this form of manifestation at onset and ten others developed it after a definite onset as rheumatic pains or chorea. This manifestation tended to come early in the disease, if at all. It less often followed on a choreic onset than it did an onset associated with rheumatic pains. In Cardiff no child who developed rheumatic fever failed to have a recurrence of rheumatism in some form or another. At least two attacks of rheumatic fever occurred in nine cases showing this manifestation.

Chorea.—Forty-three of the 214 children started rheumatism in this form which differed from all others in being relatively less liable to lead to other manifestations. In over 20 per cent. of the cases with choreic onsets no further rheumatic signs or symptoms developed.

Rheumatic Carditis.—129 children showed permanent valvular disease: 101 as mitral regurgitation, 23 as mitral stenosis, 3 as aortic regurgitation, and 2 as aortic and mitral regurgitation. Included in this group are four children who had well-marked signs of adherent pericardium. It is a fact worth recording that in at least 41 cases the initial diagnosis of rheumatic carditis was made by an assistant school medical officer during the course of routine inspection or at the clinic. It is safe to say that many of these children would never have been ascertained had school medical facilities not been available. Forty-four of the 214 rheumatic children examined showed evidence of the milder type of cardiac involvement (myocarditis, temporary dilatation, &c.). Eight cases started rheumatism in this way, and of these eight four developed permanent valvular lesions.

Arthritis.—Only ten children showed this symptom at onset, but 17 others developed arthritis during the course of rheumatic infection. Arthritis was usually preceded by periods of pain and stiffness in the joints. Of itself arthritis did not seem to be a manifestation prone to lead to cardiac involvement.

Erythema Nodosum.—This interesting manifestation occurred in three cases as a form of rheumatic onset. In six other cases it developed during the course of the disease.

Other Manifestations.—Twenty-three cases of definite rheumatism (22 involving the heart valves permanently) began without any distinct onset. It may be mentioned that in the search for a possible origin of these insidious cases histories of even sore-throat were generally lacking. The 22 cases were not congenital cardiacs; in every instance the lesions were left-sided and unaccompanied by the physical signs both locally and generally which are characteristic of congenital heart disease.

TABLE I.—*Type of Onset and its Relation to Subsequent Manifestations.*

Cases.	Mode of onset.	Subsequent manifestations.							Total additional manifestations.	Per cent. permanent heart disease.	No manifestations except onset.
		Heart symp.	Rheum. fever.	Rheum. pains.	Chorea.	Eryth. nod.	Other definite symptoms.	Permanent valv. disease.			
8	Heart symp.	3	—	1	1	—	—	4	9	50·0	—
55	Rheum. fever.	6	9	23	11	1	8	41	99	74·5	—
79	Rheum. pains.	16	8	28	8	4	9	41	114	54·4	5
43	Chorea.	7	2	17	8	1	—	17	52	39·5	10
3	Eryth. nod.	1	—	3	—	—	—	1	5	33·3	1
3	Other definite symp.	5	—	4	—	—	2	3	14	100·0	—
23	Indefinite symp.	1	—	6	2	—	—	22	31	95·5	—
214	Totals ..	39	19	82	30	6	19	129	324	60·2	16

Total manifestations per case = 2·5.

Table I. shows that onsets as rheumatic pains, rheumatic fever, and chorea were by far the most common. Next came the cases of quiet origin. The remaining cases which started with heart symptoms, erythema nodosum, &c., are relatively few. The last column in this table shows that out of the 214 cases only 16 had a single manifestation. Ten of these 16 cases were choreas, 5 were cases of rheumatic pains, and one a case of erythema nodosum. The liability of every form of onset to involve the heart is also brought out in this table. Rheumatic fever may be taken as the manifestation most prone to do this; a choreic onset would not seem at all so prone to lead to heart involvement as an onset in the form of rheumatic fever.

Age at Onset.

In 186 of the 214 cases it was possible to ascertain the age at onset of rheumatism. It was found that in 174 children (93 per cent.) it had commenced at school age as usually observed elsewhere. (Table II.)

TABLE II.

Age at Onset of Rheumatism at—

2 years	1	7 years	27	12 years	10
3 „	3	8 „	19	13 „	3
4 „	8	9 „	20	Uncertain ..	28
5 „	25	10 „	29		
6 „	25	11 „	16	Total ..	214

School age (commencing at 5 years) 174 out of 186 known cases = 93 per cent.

Season of Onset.

In 152 cases the season at which rheumatism developed was capable of being ascertained. (Table III.)

TABLE III.

Season of Onset (all Rheumatic Manifestations).

	Nos.	Approx. per cent.
Summer	45	30
Autumn	17	11
Winter	59	39
Spring	31	20
Total	152	100

It is impossible from the small numbers investigated to draw any inference as to the effect of season. R. Miller [1] says that there is a definite seasonal incidence in England between October and March, and the Medical Research report [6] suggests that the peaks in the acute rheumatic fever curve are in February and November. The Cardiff figures tend to support these views—almost 60 per cent. of cases investigated began between October and March, but if the choreic onsets are excluded the tendency of rheumatism to develop in the cold, wet months is a little more obvious. When the seasonal onset of chorea alone is considered it is interesting to find that there is more likelihood of a child developing this manifestation towards the end of a school term.

Throat Conditions and Acute Rheumatism.

The influence of throat conditions on the acute rheumatic infection of 214 Cardiff children was investigated in this inquiry and at the same time a control group of 116 non-rheumatic children were examined and subjected to the same standards.

(*a*) *Size of Tonsil.*—To say what is or what is not a healthy tonsil is a very much more difficult task than to record whether or not the tonsil is of normal size, slightly or moderately enlarged or very much enlarged. On the assumption that the size of the tonsil, in the absence of acute inflammation, is a reliable indication as to the health of the organ, a careful note of the size of the tonsil was made in each case. When the tonsils had been removed the fact was also noted and the effect (if any) of the removal upon rheumatism investigated. (Table IV.)

TABLE IV.—*Size of Tonsil.*

Tonsils.	Rheumatics.	Controls.
	Numbers and per cent.	Numbers and per cent.
Normal	74 (40·8)	54 (46·3)
Slightly enlarged ..	43 (23·7)	31 (26·7)
Moderately enlarged ..	30 (16·5)	13 (11·2)
Enlarged	17 (9·3)	10 (8·6)
Removed	17 (9·3)	8 (6·9)
No remark	33 —	— —
Totals	214 (99·6)	116 (99·7)

There is no significant difference between the two groups. If enlargement is to be taken as the expression of past infection it is clear that the Cardiff figures do not support the conclusion of the B.M.A. subcommittee,[1] who claim that the relation between rheumatism and tonsillar infection is a very close one.

(*b*) *Incidence of Sore-throat.*—Sore-throats were classified as occurring "frequently," "occasionally," "very rarely,"

"once only," and "never." The same system was adopted with the control group of children. (Table V.)

TABLE V.—*Incidence of Sore-throats.*

Sore-throat.	Rheumatics. Numbers and per cent.	Controls. Numbers and per cent.
Never	129 (60·2)	82 (70·6)
Once only	7 (3·7)	3 (2·5)
Very rare	9 (4·1)	3 (2·5)
Occasional	36 (16·8)	15 (12·8)
Frequent	33 (15·4)	13 (11·2)
Totals	214 (100·2)	116 (99·6)

Here again there is no significant difference in the rheumatic and control series in any one group. All that can be said is that there is a definite tendency for sore-throats to be a little more frequent among the rheumatic than the control groups. The association between enlargement of tonsil and sore-throat with rheumatism which has long been held is not clearly borne out by the Cardiff figures.

Influence of Tonsillectomy on Rheumatism.

Striking differences of opinion exist as to the value of tonsillectomy in the prevention and treatment of rheumatic diseases in children.

St. Lawrence,[7] after a detailed analysis of 85 children, observed for three and a half years after their tonsils were removed, considers that tonsillectomy is the most important measure at present available for the prevention of acute rheumatic fever and the allied rheumatic manifestations, while A. P. Thomson [8] says definitely: "The value of early complete tonsillectomy in the prevention of rheumatic heart disease is established." On the other hand, the Medical Research workers consider that neither cutting nor enucleation is any guarantee of immunity to rheumatism. Having regard to the advocacy of tonsillectomy for any and every rheumatic manifestation it would seem that there is need for caution until this phase of the rheumatic problem is further explored.

As regards tonsillectomy in the treatment of rheumatism, Hunt and Osman [9] have given figures which show that the operation definitely increases the risk of rheumatic recurrence, and they find that the risk is much more when the operation is done after a later attack than the first. Miller,[1] whose view is supported by Poynton, Paterson, and Spence,[10] suggests that post-operative rheumatism is in the form of chorea in 60–70 per cent. of cases, and discounts the possibility of graver manifestations occurring after operation. Ingerman and Wilson,[11] reviewing the recurrences of rheumatism occurring within three years of operation on tonsils, gives a figure so high as 75 per cent.

In the Cardiff series 17 rheumatic children had had their tonsils removed at some time or other. In 12 the removal antedated the first rheumatic manifestation. In 5 the removal post-dated the onset, but did not prevent further rheumatic manifestations, though it may have modified those. It is only fair to say that as against the 17 tonsillectomised children who developed rheumatism in spite of operation there were 3759 children similarly dealt with at the ear, nose, and throat clinic between 1917 and 1926 who, so far as is known, remained free from rheumatism.

(1) *Tonsillectomy Before Onset of Rheumatism.*—Most of these cases developed the first sign of rheumatism at intervals of from 2 weeks to 18 months after removal:—

3 within 2 weeks
1 „ 1 month
2 „ 3 months
} Five of the six developed rheumatism in the form of chorea.

2 within 4 months
2 „ 12 „
1 „ 18 „
2 at remote periods
} None of these developed chorea.

An analysis of the ten cases which showed rheumatic manifestations within 18 months of removal reveals that:—

5 of the 10 had chorea (50 per cent. as compared with 66·7 per cent. in the much larger Medical Research series).
3 had permanent valvular disease.
3 had the milder type of cardiac involvement.
2 had erythema nodosum.
6 had rheumatic pains.

A fact worth emphasising is that fully half the cases developed rheumatism in the form of chorea and these were the earliest cases to manifest rheumatism after removal. But of the five children whose chorea followed hard on tonsillectomy only one subsequently developed permanent valvular disease, whereas of the 38 cases who developed chorea without having the tonsils removed as many as 16 subsequently developed permanent valvular disease. It would be rash to generalise, however, on evidence so slender as this.

(2) *Tonsillectomy after First Rheumatic Manifestation.*—Of these cases, 5 in number, 3 had chorea (developed after removal in 2 cases), 2 had permanent valvular disease, 1 had minor heart symptoms, and 4 had rheumatic pains subsequent to removal.

To draw any general deductions as to the influence of tonsillectomy on the origin and development of rheumatism from so small a series would be fallacious in the extreme. The conclusions of the Medical Research Council workers are, however, confirmed by the results obtained from investigating a smaller series in Cardiff.

Infectivity of Rheumatism.

661 Cardiff children (sisters and brothers of rheumatics) were exposed to rheumatic infection by living in the same house. Fifty-one of these were affected (7·7 per cent. case-incidence).

It will be noted that the contact case-incidence of rheumatism is not smaller than that of such notifiable diseases as anterior poliomyelitis and cerebro-spinal fever. Aycock [12] expresses the probability of infection with certain diseases in the following rough numerical fashion: "Of susceptible children exposed to measles 1 out of 1 develops the disease; to diphtheria 1 out of 10 develops the disease and 9 out of 10 develop subclinical immunity; to poliomyelitis 1 out of 100 develops the disease and 99 out of 100 develop subclinical immunity or immunity from abortive attacks." If, therefore, rheumatism were an infection of the same order as poliomyelitis multiple cases in families would be scarce.

It must also be borne in mind that while the Cardiff figures relate entirely to school-children contacts, they were not necessarily bedfellows of the rheumatic children. The possibility of transmission of infection, which St. Lawrence [13] speaks about, was very much greater in the London series,[6] where 382 persons *were sleeping in the same rooms* as 192 children under treatment for rheumatism, than among the Cardiff children, 661 of whom were exposed *to infection by living in the same house.*

Fitness for Ordinary Occupations.

142 of the 214 children examined were found unfit by reason of the consequences of rheumatic infection to follow ordinary occupations in after life—a percentage of 66. The employment of such of these who will survive will have to be chosen with great care and circumspection. Manual work of a laborious character will always be contra-indicated.

Social Factors and Acute Rheumatism.

The social factors including cleanliness, clothing, and maternal care were thoroughly investigated in both the rheumatic and control series. No significant differences were noted. The Cardiff findings in this respect are in agreement with those of Thomson in Birmingham, Hutchinson in London, Morrison in Bristol, and Coates and Thomas in Bath. (Table VI.)

TABLE VI.—*Housing Factors in Relation to Acute Rheumatism.*

	Rheumatics.	Controls.
Number of houses ..	201	106
„ families	298	161
Families per house ..	1·48	1·51
Rooms per family ..	3·78	3·53
Total occupants—	1482	769
Over 10 years ..	1088	529
Under „ ..	394	240
Occupants per house	7·37	7·25
„ „ room	1·30	1·31

This table shows that rheumatic children, as far as overcrowding is concerned, live pretty well under the same conditions as the children of the control series. The conditions as to tenancies are also very similar in the two groups; 55·7 per cent. of rheumatics live in singly tenanted houses as against 56·6 per cent. of controls. It can therefore be inferred that overcrowding in the home has little influence on the onset of rheumatism.

But there still remains the question of the influence of overcrowding on the course of rheumatism. Rheumatic children were found to be living under overcrowded conditions in 14 instances, as judged by the Registrar-General's

standard of more than two persons per room, and 13 of these children showed evidences of cardiac involvement. This result is at least suggestive that overcrowding in the home may have an unfavourable influence on the course of a rheumatic infection. If there is any truth in the theory of rheumatic infectivity one would expect to find a higher incidence of rheumatism amongst susceptible persons in such houses than in houses not overcrowded. Investigations showed that of 52 susceptible children exposed to infection when living under overcrowded conditions five contracted acute rheumatism, giving a contact case-incidence of 9·6 per cent. as compared with the general figure of 7·7 per cent.

Environmental factors—e.g., type of district, type, age, state of repair, aspect, cleanliness, and amount of exposure of house were investigated in detail for the two series, but no significant differences were noted.

Dampness in Houses.

Each house was carefully examined for any form of dampness by the sanitary inspectors. The houses of rheumatics examined were in all cases those in which the patients were living at the time when the onset of rheumatism was alleged to have occurred. Table VII. shows that a slightly higher percentage of the rheumatics lived in damp houses.

TABLE VII.

Series.	Houses examined for dampness.	Dampness detected.	Percentage damp.
Rheumatic	201	87	43·2
Control	108	41	37·9

This table relates to dampness of any form, however slight, and it should be noted that one possible fallacy in these figures is that the returns relate to dampness found in 1927, whereas in most cases rheumatism developed some years ago when the house may or may not have been damp. Some of the houses found not damp to-day may have been quite damp at the time when the child developed rheumatism, and vice versa. With this possibility of error in mind it is obvious that any differences found in the two series must be very striking to be considered significant. The difference of 5·3 per cent. shown cannot therefore be taken as evidence in support of the theory that "living in damp dwellings is a powerful predisposing factor" [1] in the development of rheumatism.

An analysis of the site of the dampness present in the houses of each series is set out in Table VIII.

TABLE VIII.—*Site of Dampness.*

Site of dampness.	Rheumatics.	Controls.
	Numbers and per cent.	Numbers and per cent.
Ground floor	43 (21·3)	13 (12·0)
Bedrooms only ..	26 (12·9)	17 (15·7)
Both	18 (8·9)	11 (10·1)
Total damp	87 (43·1)	41 (37·8)

It will be seen that any excess in the incidence of dampness amongst the rheumatic group was probably in the form of ground floor dampness. Investigation showed that this was due to the fact that rheumatics tended to live in the older type of house property which had not a damp-proof course. It is clear, however, that there is not sufficient evidence revealed by the house analyses carried out in this inquiry to justify the conclusion that damp houses of themselves play any notable part in the production of juvenile rheumatism.

A comparison may be made here between the Cardiff results and the St. Thomas's Hospital data of the Medical Research Council's report on Social Conditions and Acute Rheumatism. Table IX. gives the percentage (with standard deviation) of houses found damp classified according to type of dampness.

The figures are not significantly different. Although the houses concerned are probably similar in London and Cardiff, the districts are no doubt very dissimilar. Rather less than 6 per cent. of each group in Cardiff were found to live in congested districts and the city is devoid of slums in the true sense of the word.

TABLE IX.—*Description of Dampness.*

Description of dampness.	Rheumatics.		Controls.	
	M.R.C.	Cardiff.	M.R.C.	Cardiff.
Rising damp (ground floor only)	22·0 (±2·1)	21·3 (±2·3)	18·0 (±3·8)	12·0 (±2·8)
Defective roof, gutters, ceiling (bedroom only)	13·8 (±1·7)	12·9 (±2·1)	11·0 (±3·1)	15·7 (±2·9)
Rising damp and defects of roof.. ..	4·0 (±1·0)	8·9 (±1·9)	4·0 (±2·0)	10·1 (±2·6)
All forms of dampness..	39·8 (±2·4)	43·1 (±3·5)	33·0 (±4·7)	37·8 (±4·6)

Even although living in a damp house would seem not to have any influence on its onset, there still remains the question as to what part of such an environmental factor may play in the course of a rheumatic infection. Does living in damp houses go with the severer type of rheumatic manifestation? A few facts which came to light in investigating the Cardiff cases may be worth recording.

1. The four cases of adherent pericardium (prognosis grave in all) did not live in damp houses.
2. Of the 23 cases of mitral stenosis seven only lived in damp houses.
3. The five cases with either aortic or aortic and mitral lesions all lived in houses that were not damp.
4. Of 124 houses investigated in respect of 129 children found to have permanent valvular disease 53 were found to be damp (42·7 per cent.) as compared with a dampness incidence of 43·2 per cent. for all rheumatics. In about half the cases of valvular disease who lived in damp houses the dampness was of the ground floor variety. It cannot be adduced from these figures that living in damp houses tends to produce a more serious type of rheumatic lesion than living in a dry house.

Soil and Elevation.

It was found that rheumatic children live on low-lying ground usually with a subsoil of estuarine mud or clay, whereas the control children were differently distributed throughout the city and were much more frequently found to live on the better type of subsoil available at higher elevations. The results indicate that there may be more than a casual relationship between soil and elevation on the one hand and rheumatism on the other.

TABLE X.—*Proximity to Water.*

Series.	0–50 yards. No. and per cent.	50–100 yards. No. and per cent.	100–200 yards. No. and per cent.	200–440 yards. No. and per cent.
Rheumatics ..	14 (6·9)	12 (5·9)	12 (5·9)	12 (5·9)
Controls	6 (5·6)	8 (7·5)	3 (2·6)	1 (0·8)

There did not seem to be any close relation between proximity to water and development of rheumatism. A slightly higher percentage of rheumatics were found to live within quarter of a mile of waterways or channels, but the increase is chiefly due to children living more than 100 yards distant from water. Bearing in mind the location of most working-class dwellings in Cardiff this slight difference in figures must be discounted. If living within 100 yards of water were a predisposing factor in the development of rheumatism then indeed the incidence of rheumatic affections in Cardiff school-children ought to be much higher.

Summary of Findings.

1. No significant differences as to size of tonsils or frequency of sore-throats were found to exist when a series of observations on rheumatic children were compared with a series of observations on a similar group of non-rheumatic children.

2. Chorea, permanent heart disease, and other rheumatic manifestations were found to have developed in several cases after tonsillectomy had been performed.

3. Some slight evidence was found in this inquiry in support of the theory of infectivity of rheumatism.

4. Overcrowding did not seem to predispose to the onset of rheumatism, but 13 of the 14 rheumatic

children found living under overcrowded conditions showed evidence of cardiac involvement.

5. The incidence of dampness in the houses of 201 rheumatic children was not significantly higher than in the houses of 108 non-rheumatic children.

6. Ground floor dampness was found to exist more often in the houses of rheumatics (which, as a rule, were older houses) than in those occupied by the controls, but this did not seem to produce a tendency towards any particular type of rheumatic onset.

7. A general dampness of the house was more often associated with the onset of rheumatic pains than other types of onset, but the differences were not significant.

8. Dampness of houses, of whatever distribution, did not appear to predispose to the onset of chorea in preference to any other type of onset.

9. Living in damp houses did not predispose especially to rheumatic fever or to cardiac involvement.

It is difficult to reconcile Cardiff experiences with the findings of the B.M.A. subcommittee, which considers that the disease in industrial towns is essentially one of children living in damp rooms. Obviously any figure for dampness in the houses of rheumatics, however high, is of itself not significant unless a comparative figure for a control group of houses relating to a suitable series of non-rheumatic children is placed beside it.

10. No close relation was found to exist between proximity to water and the development of rheumatism.

I must express my thanks to Dr. Ralph M. F. Picken, medical officer of health, Cardiff, at whose request the foregoing investigation was undertaken, for kindly permitting me to publish these results.

Bibliography.

1. B.M.A. Subcom. Rep., Brit. Med. Jour. Supplements, 1926, ii., 1; 1927, i., 121.
2. Health of School Child, 1926.
3. Allan, G. A.: Glasg. Med. Jour., August, 1924, ii., 81.
4. Thomson, A. P.: Birm. Med. Rev., 1926, N.S., i.
5. Coombs, Carey: THE LANCET, 1920, ii., 226.
6. Med. Research Council, Social Conditions and Acute Rheumatism.
7. St. Lawrence, W.: Jour. Amer. Med. Assoc., 1920, lxxv., 16.
8. Thomson, A. P.: Birm. Med. Rev., 1926, i., No. 7.
9. Hunt, W., and Osman, A.: Guy's Hosp. Rep., 1923, lxxiii., 383.
10. Poynton, F. J., Paterson, D., and Spence, J. C.: THE LANCET, 1920, ii., 1086.
11. Ingerman, E., and Wilson, M. G.: Jour. Amer. Med. Assoc., 1924, lxxxiii., 383.
12. Aycock, W. Lloyd: Amer. Jour. Hyg., January, 1928.
13. St. Lawrence, W.: Jour. Amer. Med. Assoc., lxxix., 2051.

Clinical and Laboratory Notes.

CASE OF ECLAMPSIA TREATED WITH SPINAL ANÆSTHESIA.*

BY R. H. PARAMORE, F.R.C.S. ENG.,
GYNÆCOLOGICAL SURGEON, HOSPITAL OF ST. CROSS, RUGBY.

IN the following case spinal anæsthesia was used to test the mechanistic conception of eclampsia. If the disease be due to a too great compression of the liver and kidneys, whereby a capillary obstruction of the blood flow through these organs occurs, then a measure calculated to reduce the tonicity of the abdominal walls and thoracic diaphragm should relieve or even cure the patient. Chloroform was used to stop the fits and to permit the puncture; and a persistent lateral position and complete starvation in the early after-treatment were stringently insisted on.

A married woman of 23 was admitted to hospital on Feb. 24th, 1927, at 11.30 P.M. She was well developed, and had had a child a year ago. She was seven months pregnant. A month ago her husband was called up to serve in China, and she had to give up her home and come into Rugby. This thoroughly upset her. Three weeks before admission puffiness of the face and hands had been noticed, and she complained of headaches. On the night of admission she was having supper as usual, and thinking her child was crying, left the table and went upstairs. The next thing that happened was that the people below heard a noise as of some one falling. They found the woman on the floor in a fit. A doctor was sent for, who advised admission to hospital. Before admission she had had two fits; her tongue was bitten and two teeth broken. She had a succession of fits after admission without recovering consciousness. The pulse was 104, full and bounding; respirations, 24; temperature, 98° F. At 12·30 chloroform was administered, and I saw her soon after.

By catheter, 2 oz. of highly albuminous urine came away. The lumbar region was exposed and painted with iodine; a needle inserted into the dura; cerebro-spinal fluid, apparently under normal pressure, in small quantity, was allowed to escape; and 1·5 c.cm. of a 5 per cent. solution of tropacocaine (Allen and Hanburys, Ltd.) was injected. The needle was withdrawn, the wound dressed, the chloroform stopped, and instructions given to maintain the patient on her (left) side and report at once if any further fit occurred. Nothing else was done.

I descended with the resident medical officer to his room to await events. At about half-past two we visited the patient, no report having been received. I found her in a semi-drowsy state—she had had no further fit, but had been rather restless, throwing her arms and legs about. In my presence she vomited and defæcated simultaneously, being still on her side; the visceral action was spontaneous. Her condition seemed much improved. Instructions were given that she should be maintained on her side and given nothing but water, when she could take it.

At 11 A.M. the report was favourable—the patient had had a quiet night; a further motion had been passed; she was quite rational. The blood pressure was given as 143 systolic and 100 diastolic. At 9 P.M. it was 120/80; the patient complained of headache. The total urine passed on that day (Feb. 25th) was 24 oz. From this time the further progress of the case was uneventful—except that the amount of urine passed did not exceed 30 oz. for the first four days; that the blood pressure became again raised (on Feb. 28th it was 150/110); that the fœtal heart, heard on March 1st, was not heard on March 2nd, and that the patient miscarried on March 4th. With the death of the child the amount of urine increased and the blood pressure fell; after delivery both conditions improved still more. The urine increased to over 60 oz. on some days, and the albumin, on March 8th, had gone. The patient was discharged on March 19th apparently quite well.

The method here described has not been tried in any other case, for no other up to the time of publication was available.

* Being part of a paper entitled Eclampsia and Its Treatment: An Experience with Spinal Anæsthesia in One Case, and read before the Obstetrical and Gynæcological Section of the Royal Society of Medicine on April 20th.

NOTE ON THE TREATMENT OF TOXIC PERI-ARTHRITIS.

BY L. C. DUNDAS IRVINE, B.A. CAMB., M.R.C.S. ENG.

IT is recognised that a chronic, painful inflammation of the tissues round the joints, proceeding if unchecked to deformity and loss of power, is associated with the absorption of toxins of bacterial origin.

A great many cases in the past have responded fairly satisfactorily to removal of the teeth, but far more have gone on unchanged. It may, therefore, be worth while to place on record a series of cases, the earliest of which dates back to 1924, in which there have been marked improvement from the following course of treatment: (1) An attempt was made to deal with the bacteria themselves by vaccine therapy. (2) By a carefully regulated diet, I tried to alter the nature of the bowel contents so as to encourage the growth of the lactic acid bacillus. (3) The injured tissues were treated locally by high frequency, massage, and poultices composed of mud imported from Pistany, in Czecho-Slovakia. (4) Every possible attempt was made to increase the elimination of toxic products from the body by prescribing large quantities of fluid to be drunk

daily, and particularly by giving atoquinol (Ciba) [1] in fairly large doses for a long period. It was given in periods of three days on and three days off, always with large draughts of water, and sometimes with bicarbonate of soda (in doses of grs. 5) where the patient complained that the tablets alone caused indigestion.

Eighty-seven cases have been treated. At the first examination I devoted my attention to discovering the site of the toxic absorption. In 74 per cent. of the cases this was associated with infection of the large bowel by a pathogenic *Bacillus coli communis* and a pathogenic *Streptococcus fæcalis*. In 8 per cent. the originating bacteria were found in the tonsils; in 7 per cent. they were in the teeth, mouth, and throat; in 7 per cent. in the nose and maxillary antrum or accessory sinuses. Two of the cases were gonococcal, and in two no source of bacterial infection could be discovered.

The autogenous vaccine was usually given in 16 doses, starting with five million *B. coli communis*, with five million streptococci, or 25 million staphylococci, and increasing by steps up to 200 million in *B. coli* and streptococci respectively, and to 400 million in staphylococci. The injections were given, as a general rule, twice a week and were not followed by any severe reaction. There was sometimes an increase in the joint pains, sometimes a little general malaise. As the doses increased in size, the interval between them was lengthened until the last four were given, as a rule, at intervals of ten days.

While this was going on they were put on a diet which consisted of what one might call farm produce—milk, eggs, butter, cheese, fruit, vegetables, salads, the last with lemon-juice instead of vinegar. Fish and chicken were added if the diet was found to be too low, but no red meat, and if possible no alcohol. The fluid taken was made to exceed 2 quarts a day, taken at regular intervals, barley-water, orange-juice, or lemon-juice being the prevailing forms. Some of the cases were given milk soured by the *Bacillus bulgaricus*, and, as I have said, about six tablets of atoquinol were given each day for three days and then omitted for a similar period, and repeated. Aperients were given when necessary, but every attempt was made to substitute fruit for purgatives.

The inflamed joints, if very painful and swollen, were either poulticed with Pistany mud or, in the case of the hands and feet, actually plunged into a basin of the mud. The skin had to be plentifully smeared with vaseline to prevent the mud from adhering and burning. In one or two cases slight burns did occur which gave trouble and were a long time in healing, but eventually cleared up satisfactorily. It was found that the mud reduced the tenderness and swelling of the joints to a remarkable degree, and made it possible to manipulate them at a very much earlier stage in the treatment. Passive movement and massage was begun as soon as it could be done without pain, and it was very striking how rapidly the most severely deformed hands responded to this treatment and resumed their normal shape. Where the joints were very stiff, high-frequency was added to the massage and manipulation, and it was found that movements which had not been possible for months, or even years, were regained. The local treatment was given daily whenever possible, though at the beginning many of the cases could not stand more than twice a week, as the skin over the inflamed tissues was apt to become sore. Towards the close of the treatment many of the cases were given artificial light with very obvious beneficial results in the improvement of the general bodily tone.

[1] There was at one time a good deal of hostile feeling against this preparation after reports of cases where fatal cirrhosis trouble followed on its long-continued administration. In the course of four years, however, I have seen no case in which it gave rise to any untoward symptoms, and even a patient with an enlarged liver due to taking too much alcohol stood the treatment satisfactorily.

Of the 87 patients treated, 53 were able to resume their work without pain and have, so far, had no return; 22 were able to go back to work, but had a relapse, which yielded to a further course of treatment. Of these relapsed cases, three came back for a third course of treatment, and of the three one is having a fourth course. In each of the latter cases the patient has been sufficiently relieved from pain and improved in general health to present himself, of his own accord, for further treatment. Of the remaining 12, six have proved unsatisfactory; of these six, two were those in whom no source of infection could be found, and the remaining six have too recently completed their treatment for any definite result to be claimed.

No special discovery and no new method of treatment is claimed for this series of cases. It is probably only the combination of the various methods of treatment and the thoroughness with which they have been carried out which has led to such satisfactory results. The total number treated is, of course, small, and it may well be that when this has been considerably increased the percentage of those who returned to their work will not be found to be so high. But it is not unsatisfactory that so many patients suffering from a crippling and painful disease should have improved enough to resume their work.

A NON-IRRITATING SILVER-ARSENIC COMPOUND.

By HAROLD O. LONG, M.R.C.S. ENG.

THE extreme toxicity to the tissues of preparations of silver and arsenic is well known; because they cannot be introduced intramuscularly or subcutaneously intravenous therapy has been the one method of exhibiting them. While the intravenous method of administration is the ideal one, if conditions are satisfactory, it has disadvantages and distinct limitations in certain circumstances, first on account of the difficulty of finding a vein in some patients; and, secondly, because of the great local reaction in the surrounding tissues if the merest drop of some compounds escapes the lumen of the vein. This latter accident may not only produce sloughing of the tissues, but it may completely damage the area for future intravenous injections. Worrying experiences of this kind, both personal and reported by other practitioners, led me to seek a substitute for the preparations hitherto used in the treatment of disseminated sclerosis and other nervous diseases of obscure origin. Arseno-argenticum (May and Baker) is an excellent compound with which some highly satisfactory results have been obtained over a number of years in apparently controlling the manifestation of the disease and also in greatly improving symptoms. Doses of 0·05 g. to 0·3 g. (increasing by 0·05 g.) have been given intravenously in six doses at weekly or fortnightly intervals each year, the patient taking courses of arsenic by the mouth periodically during the rest of the year. The risk of continuing treatment is very great as some veins become almost impossible to find, especially if a single slight accident has produced thickening and inflammation in the area. For this reason a new preparation for intramuscular injection, metarseno-argenticum (M.A.A.) has been especially prepared for the writer by Messrs. May and Baker, Ltd. It contains approximately the same percentage of silver and arsenic, and has been used in the same dosage and given at similar intervals to the intravenous product arseno-argenticum. It has been extensively used on mice and rabbits with no apparent irritation of the tissues. The first injection given to a human being was made by the writer into his own abdominal wall. A solution of 0·05 g. in 2 c.cm. of sterile distilled water was used and about 0·5 c.cm. injected. There was a little pain but no inflammation, and after a week there was no trace of the site of inoculation. The next injection was given to a

patient who had had arseno-argenticum injections for five years, and had come to dread them very much on account of the extreme difficulty of administration. The first dose was again a solution of 0·05 g. in 2 c.cm. of water, and 0·75 c.cm. was given in the gluteal region. There was no pain or subsequent discomfort. The injections were then given at weekly intervals in the following way :—

1. 0·05 g. in 2 c.cm. s.d.w.	No reaction.
2. 0·1 g. " "	"
3. 0·2 g. in 3 c.cm. s.d.w.	Some thickening. Severe pain down the leg for a few moments.
4. 0·2 g. " "	No reaction.
5. 0·3 g. in 5 c.cm. s.d.w.	No serious reaction; slight soreness and irritation for three or four days.
6. 0·3 g. " "	Painless and produced no subsequent trouble.

s.d.w. = Sterile distilled water.

The next patient had most difficult veins and was delighted at being spared the previous intravenous treatment. The injections were given into the gluteal region, and the record is as follows :—

Experimental dose of 0·05 g. in 2 c.cm. water, of which 0·75 c.cm. was given, produced no general or local reaction.

1. 0·05 g. in 2 c.cm. s.d.w.	No reaction.
2. 0·1 g. " "	A little solution leaked out of the syringe into the subcutaneous tissues, and produced, momentarily, considerable pain and smarting, and some slight redness later.
3. 0·1 g. in 3 c.cm. s.d.w.	The greater dilution produced no pain or reaction.
4. 0·2 g. in 5 c.cm. s.d.w.	These all produced slight pain on injection, but no subsequent trouble at all, except for a little thickening for a few days.
5. 0·2 g. " "	
6. 0·3 g. in 8 c.cm. s.d.w.	

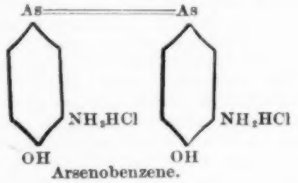
Altogether, therefore, 15 injections have been given with no bad reaction at all.

The product, therefore, seems to be safe enough for further use, and the relief to the patient and operator is tremendous.

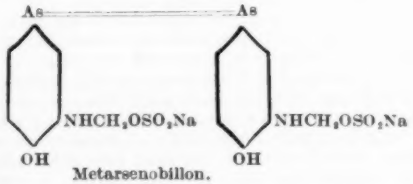
The two products are almost identical in silver and arsenic content, thus :—

	Silver. Per cent.	Arsenic. Per cent.
Arseno-argenticum contains	13 to 15	21 to 24
Metarseno-argenticum "	14	16 to 17

No satisfactory formulæ can be assigned to these silver coördination products of arseno-bases. Metarsenobillon is a formaldehyde bisulphite derivative of arsenobenzene, the structural relationship of these bases being shown by the following formulæ :—



Arsenobenzene.



Metarsenobillon.

Metarseno-argenticum is obtainable from the manufacturers, Messrs. May and Baker, Battersea, to whom, and especially to Dr. A. J. Ewins, of their research laboratory, my thanks are due for their coöperation and interest in what was required.

Medical Societies.

SOCIETY OF MEDICAL OFFICERS OF HEALTH.

Control of Diphtheria in Institutions.

A meeting of the Naval, Military, and Air Force Hygiene Group of this Society was held on May 3rd with Major-General H. P. W. Barrow, the President, in the chair. A discussion took place on the Problem of Diphtheria Control in Crowded Institutions.

Surg. Commander S. F. Dudley said that he had had a good deal of experience of diphtheria from the clinical, administrative, and bacteriological points of view. Although virulent Klebs-Löffler bacilli might give rise to the atoxic variety, it might, for practical purposes, be said that the reverse change never occurred. People who were immune to diphtheria because they possessed natural antitoxin in their blood were distinguished from those who had little or none by the Schick reaction. Sore-throats due to the diphtheria bacillus might be divided into three groups. The first included typical diphtheritic throats with an exudate pathognomonic to the naked eye. The second was a large group with throats or a general condition suggestive of diphtheria. These were especially common in crowded institutions, and if at all ill should be treated immediately with antitoxin without waiting for the swab report. A negative report threw doubt on the diagnosis because the Klebs-Löffler bacillus was easily demonstrated in the majority of primary cultures. Virulent and avirulent strains were found in the same throat more often than had been realised; therefore a report of the presence of the atoxic variety did not invariably rule out diphtheria. In a mixed culture chance determined which variety was tested for toxigenicity. The third group comprised those whose throats contained the bacillus although the clinical condition did not suggest diphtheria. The question then arose: Was the case diphtheria or tonsillitis in a diphtheria carrier? It was commonly believed that avirulent bacilli could not cause sore-throat, but if the bacilli found were virulent the Schick reaction would solve the problem. A Schick negative excluded diphtheria, and Schick positive carriers of virulent Klebs-Löffler bacilli were so rare as to be negligible. In crowded establishments the combination of a sore-throat which was not diphtheria with a positive swab was not at all uncommon. 7 per cent. of some 4000 healthy boys had been proved to be carriers at the Royal Naval School, while 15 per cent. of the swabs from over 1000 non-membranous sore-throats grew the Klebs-Löffler organism. Where the virulence tests and Schick reactions of these boys were known they confirmed the deduction that about half were mild cases of diphtheria in partially immune Schick-positive reactors, the remainder being secondary infections in Schick-negative carriers. The third group rarely required antitoxin, and to swab their throats was only tempting providence. The use of the throat swab in diphtheria diagnosis was therefore limited. To withhold antitoxin until the report came was criminal, as irreparable harm might ensue in the 24 hours. Mistakes occasionally occurred, and Surg. Commander Dudley quoted two instructive cases where the report was negative on undoubted cases of diphtheria. A culture which was negative after 24 hours might show Klebs-Löffler bacilli a day later. This lag was not common in primary cultures, but was quite often seen in swabs from carriers. The bacilli must always be tested for virulence, or avirulent carriers would be unnecessarily detained. The ratio of virulent to avirulent bacilli varied enormously at different times, and after a variable period of contact with its host the virulent bacillus would change into or be replaced by the atoxic variety. The carriers of virulent bacilli with Schick positive reaction were so rare that they

might be neglected, so that virulence tests might be omitted if the reaction was positive.

Danger of the Throat Swab.

The attempt to eradicate by mass swabbing diphtheria which had once got a grip in a crowded institution was hopeless, owing to the intermittence of the carrier state and the fact that the vast majority of symptomless infections only lasted for a short time. Positive and negative findings might alternate for a few days, then a run of six negatives might be followed by a single positive or a run of positives. Surg. Commander Dudley's work thoroughly confirmed that of McCartney and Harvey.[1] A few boys were completely immune to carrier infection, but others became reinfected over and over again during their years at school. At least 75 per cent. of the boys who had passed through Greenwich School during the last seven years must have been infected with diphtheria at some time or other. A series of examinations had proved that boys might be negative one day and positive the next. These investigations had shown that it was not worth while to segregate carriers found experimentally. The carrier was not a pathological curiosity, and in dense populations the diphtheria patient was more a curiosity than the carrier. A simple deduction had shown that during the last three years at Greenwich School there must have been some 20 carriers of virulent bacilli to every clinical case of diphtheria, and about 3000 invisible and undiscovered infections with virulent bacilli. The diphtheria throat swab had been in many ways a curse; it might delay antitoxin treatment, and a positive report without a virulence or Schick test must have forced a wrong diagnosis on many non-specific throats, thus falsifying the notification returns. Two or three negative swabs constituted a very false standard of freedom. The results of every throat swab must be correlated with all other available clinical environmental data. The step of increasing air space in dormitories had been very successful in epidemic meningitis, but three feet between the beds seemed to be no barrier to the spread of diphtheria among British boys. A distance of 9 feet seemed to be necessary and would be quite impracticable under Service conditions. Nor would it be advisable in training establishments, because that was where the raw recruit was seasoned by contact with the organisms of his new environment. To protect the boy under training would only transfer the morbidity to sea-going ships where it would be far harder to treat and control.

Active Immunisation.

Active immunisation was a safe and efficient method of controlling diphtheria, and suffered from none of the disadvantages of other methods. Under natural conditions the whole population slowly acquired immunity; active immunisation merely hastened the natural processes, and had proved itself to be an almost certain method of eradicating symptomatic diphtheria. Active immunisation produced a solid and lasting immunity. Out of 1004 parents circularised from Greenwich School only 7 had refused to allow their boys to be immunised, which proved that there was no great public objection. Disasters which had occurred were almost certainly due to dissociation of toxin in improperly stored mixtures, or to overdosage. These errors and the danger of anaphylaxis could be eliminated by the use of a prophylactic containing neither toxin nor horse serum. A toxoid mixture was just as good if not better than the older toxin-antitoxin mixtures. The reactions after injection were negligible: a local redness and œdema the size of a half-crown. No boys complained of feeling ill, though 3 out of 400 had slight temperatures. With good organisation, a team of two medical officers and three assistants should be able to perform 200 intradermic or immunising injections in an hour. The cost of Schick toxin and prophylactic material for 1000 men with 40 per cent. positive reactors would be about £60, and that sum would be saved within the year if each case of diphtheria were estimated as costing £30. If the entrants at Greenwich School could have been immunised before 1920, about £10,000 would have been saved at a cost of £150. The new entrants were the most susceptible class and accounted for a large proportion of the symptomatic diphtherial infections; they were always segregated for their first three or four weeks. Last term they had had their first prophylactic dose some days before coming in contact with the old boys, among whom were many virulent carriers. The herd immunity to diphtheria started to rise as soon as the first batch of Schick positive reactors had been inoculated. Only two cases occurred during the term, although the environment was exceptionally favourable for the dissemination of symptomless infection with both virulent and avirulent bacilli. Klebs-Löffler bacilli were found in over 200 primary cultures from apparently healthy boys. Surg. Commander Dudley felt confident that within six months diphtheria would have practically vanished from the Royal Naval School. He thought that diphtheria incidence could be reduced to a negligible figure and ultimately abolished from an institution by immunising the new comers and segregating them for a few weeks. This would avoid a large initial outlay in time and money, and might indirectly protect the whole population.

Discussion.

Colonel P. R. HENDERSON asked whether an intercurrent tonsillitis might delay the process of active immunisation, so that symptomatic cases appeared. This seemed to have happened at Caterham. Analysis of the barrack square dust had shown that it was 94 per cent. sharp pieces of silica, which might account for the sore-throats.

Major W. R. O'FARRELL did not agree that naked-eye diagnosis was the only investigation necessary; Vincent's angina might simulate diphtheria very closely. The "mild" cases of diphtheria were a distinct entity and required antitoxin; they should not be separated from diphtheria in any classification. He was in favour of the throat swab and had been unfortunate with the Schick test. Many of his cases had been Schick negative, and elderly people were often susceptible by the Schick test although they did not get diphtheria. He would rather trust the throat swab than the Schick reaction, although the latter was useful in eliminating a few cases before the administration of toxin-antitoxin.

Dr. GRAHAM FORBES expressed gratification that increasing numbers of metropolitan boroughs were affording facilities for diphtheria immunisation, and mentioned some of the results. He agreed that a 24-hour culture was insufficient and that a virulence test was essential. Before its introduction many school-children had been kept away unnecessarily. In the epidemic years, 66–70 per cent. of carriers had had virulent bacilli in their throats, but now the percentage was reversed. He asked how long the immunity lasted after active immunisation.

Sir WILFRED BEVERIDGE said that toxin-antitoxin mixture could never safely be sent to hot climates as it had to be packed in ice, and the ice killed the antitoxin and left the toxin. This was the cause of the disasters in Australia and America. The lesson was that tropical workers must learn to make their own toxin-antitoxin. A throat swab was insufficient; the nose must always be swabbed as well.

Dr. J. D. ROLLESTON said that his 30 years' experience of diphtheria confirmed what Surg. Commander Dudley had said. He mentioned diphtheritic whitlow, which rapidly cleared up under a dose of antitoxin. The idea that antitoxin was valueless after the fifth day he stigmatised as a "damnable doctrine"; so long as there was any membrane antitoxin should be given. He was so convinced of the futility of routine swabbing before discharge that he had discontinued the practice. As an example of the caprice of spontaneous immunisation he mentioned the case of his predecessor who, at the age of 63,

[1] See THE LANCET, Feb. 4th, p. 245.

after 42 years as medical officer to a fever hospital, had developed diphtheria with severe paralysis.

The PRESIDENT asked if active immunisation would be practical for recruits who were only under observation in their depôts for five or six months.

Reply.

Commander DUDLEY, in reply, said that the Schick reaction only showed a limit of antitoxin in the blood; it was possible for a person to be in a pre-immune condition with no antitoxin in the blood and a Schick positive. Injection would then put him in a position to resist diphtheria in a much shorter time than was realised. The injection he used was simple toxoid with no antitoxin, and this avoided all disasters. He thought that a lot of the epidemiological peculiarities of diphtheria were due to changes in the organism itself. The theory of the immutability of the virulent and avirulent strains could not be supported in the light of recent unpublished work.

OPHTHALMOLOGICAL SOCIETY.

ANNUAL CONGRESS.

(*Concluded from p. 860.*)

Mr. E. WOLFF read a paper (by himself and Mr. F. DAVIES) on

Fragmentation of the Retinal Blood Stream.

He said this phenomenon was generally regarded as a post-mortem one, and had been suggested as a means of proving the difference between death and such simulating conditions as cataleptic trance or apparent death from drowning. But his colleague and he, in some experimental work on the production of retinal œdema, found a method of producing and abolisbing fragmentation at will in the living animal. The condition was first described by Bouchut in 1869, and Mr. Usher had shown that just before death the blood in the vessels took on a finely granular appearance, then became coarsely granular, and then segmented, or beaded. Bulmer compared this picture with that of a chain of anthrax bacilli. Usher noted that at times spontaneous respiration might be continued after the onset of this granular appearance. Kahn, in 1916, said he regarded segmentation of the retinal blood stream as an absolute sign of death. That this was not so was proved by the following experiment. Working on cats, Mr. Wolff and Mr. Davies tied the innominate and subclavian arteries, which are the only branches of the aortic arch in this animal and also the superior vena cava. Fragmentation became clearly evident; when the ligatures on these vessels were released the phenomena disappeared and could be reproduced at will. According to Mr. Wolff and his collaborator the segmentation of the blood stream was influenced by the following factors: the slowing of the blood stream; the size of the vessel; the type of the corpuscle; the type of serum; the type of lining endothelium; and possibly the pressure on the vessel—i.e., the intra-ocular tension. The sequence of events was as follows: the arteries became fine threads almost at once; the granular appearance of the blood and visible streaming in the veins were noted in 10 seconds; fragmentation was noted in 35 seconds. The authors of the paper agreed with Gayet that the segmentation sign and all other ophthalmoscopic signs of death had lost their importance in proportion to the amount of careful study which had been given to them.

The paper was discussed by Mr. A. W. ORMOND, Mr. GRAY CLEGG, and the PRESIDENT.

The afternoon of April 19th was given up to the examination and discussion of a large number of clinical cases at Moorfields. In the evening a discussion took place on the

Causes and Treatment of Iridocyclitis with Raised Tension.

Mr. R. AFFLECK GREEVES, in opening, said he assumed that the discussion was mainly concerned with raised intra-ocular tension in the active stages of iridocyclitis. The causes and treatment of this condition, as distinct from the secondary glaucoma which arose from the inflammatory process, had received but scant attention not only in text-books but in the literature. In many varieties of glaucoma there was a rise of tension due to a blocking of the excretory angle; but glaucoma could exist in association with a normal or increased depth of the anterior chamber, and in the absence of any apposition or adhesion of the iris root to the corneal periphery. In 1913 he suggested that the cause of the deepening of the anterior chamber in iridocyclitis, which might occur independently of a rise of tension, depended upon osmosis; the colloids in the anterior chamber would take up water, the vitreous body would lose it, and so the lens and iris would move back. There was now considerable evidence that the intra-ocular fluid was a transudate from the capillaries of the ciliary body, and Mr. Duke-Elder's work supported this idea. Intra-ocular pressure could be varied by changing the relative compositions of the blood and aqueous, a condition which must occur in inflammations of the ciliary body because of the increased permeability of the capillary walls. Such conditions might be factors in the causation of glaucoma in cases of serous iridocyclitis. The latter two conditions occurred most frequently in middle aged and elderly people whose anterior chamber was usually shallow. This was apparently a different type of case from that of iridocyclitis with raised tension in which the anterior chamber was either normal or increased in depth, as in them the onset of the inflammatory process was sufficient to induce the condition. This kind of case was made worse by the use of mydriatics, while miotics often caused a fall of tension. Yet it was not the case that mydriatics were always successful in people who had a deep or a normal anterior chamber. In more than one case he had noted that atropine at first raised the tension, while eserine reduced it, but after treating with a miotic for some days, so lowering the tension, atropine could be used with impunity.

In these cases there was much difference of opinion on the question of mydriatics versus miotics. The general line of treatment which Mr. Greeves usually adopted was to use a miotic when the particular anterior chamber was shallow and the appearance of the eye suggested a predisposition to glaucoma. For a deep or normal anterior chamber he instilled homatropine, and, if this proved beneficial, he continued with atropine. If, however, the tension remained raised or was increased he resorted to miotics. If definite improvement followed this and tension was normal for some days he again used a mydriatic.

Mr. W. H. MCMULLEN commented on the great variety in the histories and clinical pictures presented by cases in which iridocyclitis had been accompanied by increased tension. Many tended to conform to one of three types: (1) Those in which increased tension occurred soon after inflammation set in; (2) those cases of glaucoma in which uveal inflammation could be found; (3) cases of chronic iridocyclitis in which increase of tension occurred months, perhaps years, after the onset of obvious inflammation. With regard to the treatment of class (1) there were two distinct schools. One stressed the danger of provoking high tension by using mydriatics, advised great caution in their use, and urged the use of a miotic instead on the slightest increase of tension. The other school insisted on the great value of mydriatics, and thought they should be used boldly and freely. They said the surgeon should be prepared to operate should a considerable rise of tension occur. Mr. McMullen accepted the teaching of this second school. In this type the great cause of the high tension was the iridocyclitis, and the most effective means of relieving the inflammation should therefore be adopted, especially as rest was so important. Dilatation of the pupil was also desirable, so as to prevent the formation of synechiæ. Sometimes rest in bed, purging, diaphoresis, leeching, the local application of heat, and the continued use of atropine caused a fairly acute rise of tension to subside within 24 hours, without operation.

He described the operative measures when these were needed. In type (2) the history might be exactly similar to that of primary glaucoma, and very careful examination with the slit-lamp might be necessary to detect the few spots of keratitis punctata or other evidence of inflammation of the uvea. The treatment of this class of case presented a difficult problem, as more was required to be known about the ætiology and pathology. His experience was that these cases did not do well on atropine, or on atropine and paracentesis. Sometimes miotics quickly relieved tension, but it quickly rose again. In most cases operation was required to bring about a permanent reduction of tension, either iridectomy alone or combined with fistulisation. In acute or subacute glaucoma with very slight signs of uveal inflammation medical treatment should not be continued long. The operation he preferred was Lagrange's. In type (3) there might be an insidious increase of tension, which could easily be overlooked until it had caused cupping of the disc and defective fields of vision. Medical treatment sometimes reduced the tension here, but recurrence was likely, and operation was needed permanently to relieve the tension. No method but operation was likely to be effective when the glaucoma was chronic, with cupping of the disc. The choice of the operation must be related to the condition of the eye, the aim being to produce a filtering scar.

Sir ARNOLD LAWSON said he did not remember having had a case in which he derived satisfaction from the use of a miotic. He felt that the use of atropine could not be wrong, and the reason it did not always act in the way it was hoped was that the inflammation had not been, at the time, successfully controlled. Often the causal factor was obvious, for the patient's Wassermann was strongly positive, or oral sepsis might be present, though it was a danger to seek to attribute to mild oral sepsis because such was found, any disease which might be present in the body. Vaccines in these cases he had found to be very disappointing. Paracentesis should not be persisted in if it had failed two or three times. He favoured anterior sclerectomy with a small iridectomy.

Mr. J. GRAY CLEGG said that in 27 years he had found that in his hospital 146 cases of iridocyclitis were severe enough to warrant in-patient treatment, and 55 of them presented definite raised tension which was not due to occlusion of the pupil. In the 55 cases the underlying causes were: syphilis in 6, tubercle in 2, a septic focus in 12. In 35 the cause was not found. It was his practice always to try medical methods first, and only when these failed to restore normal tension to the globe did he operate. He described his medical procedures. Non-operative measures were successful in 23 of the 55 cases, but the abnormal tension was liable to return. The operation he now carried out was paracentesis—which might have to be repeated several times—as iridectomy seemed to aggravate the inflammation. The ideal was to produce a permanent drainage from the anterior chamber.

Mr. T. HARRISON BUTLER thought that no case which had a florid iridocyclitis and approximated to sympathetic trouble should be operated upon if it could at all be avoided. Observing pigment on the posterior surface of the cornea was not necessarily an indication of an inflammatory process; it might show senile degeneration. In the florid acute cases the use of eserine was apt to be disastrous. Most of the cases occurred in women, and it was always wise to have their genital region investigated and put right by an expert.

Mr. A. L. WHITEHEAD said he had found, in a large number of these cases in women, some definite diseased condition—usually septic—in the vagina or uterus. But in others no cause could be found. Tuberculous iridocyclitis had been very rare in his experience. Sepsis and syphilis were much more frequent accompaniments. In the treatment of the eye itself he attached the greatest importance to the application of heat, both moist and dry, which could be carried out best by means of the electric pad. Hot irrigations of saline or boric acid for several minutes at a time and repeated was very valuable, as also was the application of leeches. Operation in these cases was frequently disastrous. Occasionally paracentesis had a very good effect.

Colonel H. HERBERT spoke of the value of atropine in reducing tension in cases which were definitely due to iridocyclitis. Sclerectomy was too severe.

Other speakers followed, and the openers replied.

On Friday morning the Congress discussed the

DIAGNOSIS AND TREATMENT OF INFLAMMATORY AFFECTIONS OF THE ORBIT.

Mr. NORMAN PATTERSON, in opening, said, as a rhinologist, that inflammatory conditions affecting the orbit were in most instances secondary to an infection of the nasal sinuses, and children were the chief subjects. Birch-Hirschfeld found that out of 684 cases of orbital inflammation 409 were due to an inflamed condition of the accessory sinus, and stated that the proportion would probably have been higher if the nose and sinuses had been examined in every case. The speaker's own conclusion was that disease of the antrum and sphenoidal sinuses was rarely responsible for orbital conditions. In nasal obstruction the nasal drainage might be so checked that infection passed into the orbit. Mr. Patterson detailed the nasal conditions usually found and the methods of diagnosis. Orbital inflammation, he said, might occur very suddenly soon after the onset of a nasal catarrh, and at a later stage pain was increased by ocular movements. In all cases of orbital inflammation transillumination should be carried out, and a thorough X ray study of the sinuses made. Thrombosis of the cavernous sinus might be secondary to orbital cellulitis, or it might arise by direct spread of infection from one of the nasal sinuses, generally the sphenoid. He considered treatment at some length, dividing it into three heads: general, the treatment of the nasal condition, and dealing with the orbital complication.

Mr. A. F. MACCALLAN followed with an equally elaborate contribution from the ophthalmic side. He suggested the following classification: (1) injuries; (2) primary osteomyelitis; (3) acute dacryo-adenitis; (4) spread of inflammation from neighbouring parts, as in panophthalmitis, cavernous sinus thrombosis, infected wounds or abscesses of face, acute pharyngitis, periodontitis, infections of accessory sinuses, tuberculous meningitis; (5) septicæmic conditions; (6) syphilis and tubercle; (7) orbital myiasis, aspergillosis, and actinomycosis. These he dealt with in succession, and reported a number of illustrative cases.

Dr. P. WATSON-WILLIAMS, Mr. SOMERVILLE HASTINGS, Mr. E. D. DAVIS, Mr. HARRISON BUTLER, Sir WILLIAM LISTER, Dr. G. MACKAY, Mr. A. L. WHITEHEAD, and Mr. JAMESON EVANS took part in the discussion.

Among other papers read was one by Mr. CHARLES GOULDEN on the

Illumination of the Field of Operation in Ophthalmic Surgery.

He said that for the attainment of the best results two important conditions must be satisfied: (1) a short focusing of the image of a homogeneous source of light upon the part of the eye to be examined; (2) the light must be so directed that all reflex from any reflecting surface of the eye was avoided. The first condition was secured by the Lister operating lamp and the Hess Hamner lamp, but the avoiding of a reflex from the reflecting surface of the eye during operations had not received sufficient consideration; yet the illumination of the eye was too important to be left to a nurse or other inexperienced person. The paper was devoted to the question of avoiding a confusing corneal reflex and the brilliant glint of the knife or needle being used. For daylight operating, even in ophthalmic operating theatres, the bed was often put into a position which was not the best. The operating table should be parallel with the window, with the eye in question towards the window. But even then lamps were essential for good illumination. The beam from the lamp should be directed

over the forearm of the hand which was fixing the eye, and should make with the patient's visual axis as great an angle as possible without obstruction by the brow and nose. Mr. Goulden gave the positions best adapted to various operations.

The Bowman lecture was delivered by Prof. G. ELLIOT SMITH, who dealt with

The New Vision.

He spoke of the importance to man of the transference of function that had taken place in the brain during evolutionary processes. A new cortical area, known as the neopallium, had been developed when the mammal had evolved from the primitive reptile, and had gradually assumed functions formerly carried on by the mid-brain and other lower centres. Later, the development of the macula lutea in monkeys and man had provided a new type of vision, which enabled man to see the world and appreciate its meaning as no other living creature was able to do. This fuller vision was dependent on structural changes. Prof. Elliot Smith traced the steps whereby in mammals the functions of motor control, formerly exercised by the quadrigeminal bodies, became vested in the cerebral cortex. This process was said to be incomplete in the rabbit, the control of the hind-limbs being still retained by the mid-brain, whereas the cortex controlled the movements of head, fore-limbs, and body. Rearrangement of the fibres of the optic tract in the higher mammals, associated with binocular vision, brought about a further diminution in the power of control of the quadrigeminal bodies, and when the macula lutea developed, the fibres from the percipient cells in this area, which accounted for more than a third of the optic nerve, increased greatly the proportion of fibres going to the lateral geniculate body. This body, losing much of its autonomy, became more and more an intermediary between the retina and the neopallium. Thus, in man, almost the whole function of visual perception became concentrated in the cerebral cortex, and he is thus enabled clearly to see, to understand, and to interpret what is happening around him.

ROYAL ACADEMY OF MEDICINE IN IRELAND.

SECTION OF OBSTETRICS.

A MEETING of this Section was held on April 20th, DR. GIBBON FITZGIBBON, the President, in the chair.

Obstetric Practice at the Rotunda Hospital.

DR. BETHEL SOLOMONS, Master of the Rotunda Hospital, read the clinical report of the hospital for the year 1926–27. He said that during the year radiographic plant had been installed and had proved useful both for obstetrical diagnosis and for gynæcological diagnosis and treatment; he explained how pelvimetry was done with X rays. The pathological laboratory had been reopened; the scope of the antenatal department had been greatly increased, and a small ward had been opened for the treatment of infants. The number of Cæsarean sections was still large in spite of every effort to avoid them, the lower segment being the chosen route. The treatment of eclampsia had scarcely altered; morphine was used, and glucose was given by the mouth or rectum or intravenously. Pituitrin, 0·5 c.cm., was injected during colon lavage, when the result was most satisfactory. Fifty-three cases of antepartum hæmorrhage had been treated without a death. Among the 3717 patients admitted to hospital during the year there had been 12 deaths (0·32 per cent.).

The PRESIDENT said that the treatment of septic cases at the hospital was apparently much what it had been at the end of his term as master. In the last few years treatment by vaccines and antitoxins had been largely dropped, but blood transfusion was a valuable measure. Cæsarean section via the lower segment was more difficult than the classical operation, but its results were better. He did not think, however, that it would have a much greater influence on the recovery of a case which had been actually infected. In these circumstances drainage should always be done at the time of operation. He was convinced that in no case of accidental hæmorrhage was plugging of the cervix indicated; he had seen disastrous results from this practice.

Sir WILLIAM SMYLY referred to improvement in the service of the hospital during the year of Dr. Solomons's mastership, and advocated use of the term "eclampsism" recommended by Dr. Bar for cases in which there were no convulsions, instead of "pre-eclamptic"; whilst "eclamptic" should be reserved for cases with convulsions. It was remarkable that there had been three cases of unruptured tubal pregnancy within the 12 months.

Dr. LOUIS CASSIDY thought that vaginal plugging should only be done if the cervix was completely closed and should not be used except in an emergency. At the Coombe Hospital it had been found that at least half of the women who developed sepsis had not been interfered with. He believed that there were three causes for sepsis—namely, external contamination, a septic focus in the body (e.g., in the teeth), and residual urine in the bladder. He felt that Cæsarean section was too largely employed at present. So long as there was no toxæmia or albuminuria the chances of delivery by the normal channels were generally good.

Dr. G. J. W. TIERNEY thought that the statement by Dr. Solomons in the report, that he would never perforate a living child, would add considerably to the prestige of the hospital. He noticed that in cases of induction of labour, oil, quinine, and pituitrin were given, but the last-named was never used if there was any disproportion. It seemed to him that if pituitrin was omitted because it brought about uterine contractions, then quinine and possibly also oil should be omitted; but he felt that where the disproportion was only slight all three might safely be used.

Dr. D. J. CANNON referred to the necessity of treating shock before hastening labour by rupture of the membranes.

Dr. A. H. DAVIDSON, speaking of the use of pituitrin in eclampsia in order to get the bowels to move, said that he thought this might be rather dangerous, as pituitrin raised the blood pressure, and might cause hæmorrhage into the brain or some other vital part. As a means of producing spinal anæsthesia he had found that 1·0 c.cm. of stovaine produced absolutely perfect anæsthesia for 1 hour and 40 minutes; and that there was no necessity to give 2·0 c.cm.

Dr. J. S. QUIN believed that the only treatment really of value in septic cases was blood transfusion.

Prof. R. J. ROWLETTE was glad to notice that in septic cases Dr. Solomons had returned to some extent to the use of vaccines, and hoped that this would reduce the mortality.

Dr. N. MCI. FALKINER suggested that a detailed report of the cases that attended the antenatal department and were delivered in the Rotunda Hospital should be kept, and compared with those cases which did not attend the department.

SECTION OF ANATOMY AND PHYSIOLOGY.

A MEETING of this Section was held on March 23rd, Prof. J. O'C. O'CONNOR, the President, in the chair.

Dr. W. R. AYKROYD read a paper on

Vitamin-A Deficiency in Newfoundland.

He said that Newfoundlanders as a people lived on a diet deficient in fat-soluble and other vitamins. Functional hemeralopia, not directly associated with beri-beri or scurvy, occurred amongst them and was rapidly cured by foods rich in vitamin A. A similar condition due to failure in synthesis of rhodopsin occurred in rats starved of vitamin A. Deficiency of vitamin A had not been definitely associated with any other condition in Newfoundland.

The PRESIDENT, commenting on the fact that a people who supply the greater part of the world with

vitamin A should suffer from lack of it themselves, said that in Denmark during the war there was for the first time a complete disappearance of deficiency diseases owing to the fact that the Danes were then unable to export all their butter. He asked whether in Newfoundland the workers who prepared the oil were subject to night-blindness.

Dr. R. E. STEEN inquired whether shortage of vitamin A had any share in the causation of rickets, and after other contributions to the discussion Dr. AYKROYD, in reply, said that the fishermen who actually handled the oil did so in a weak light, and therefore do not suffer from functional hermeralopia. In his opinion vitamin A had no share in the causation of rickets and in his series of cases the ocular symptoms appeared by themselves, and were unaccompanied by rickets.

Prof. A. F. DIXON showed three specimens of double monsters, with varying degrees of duplicity.

THE ROYAL SOCIETY.

PHYSIOLOGY OF THE CEREBRAL HEMISPHERES.

ON May 10th Prof. IVAN PAVLOV, a Foreign Member of the Society, delivered the Croonian Lecture on Certain Problems in the Physiology of the Cerebral Hemispheres. The following is an abstract of his address :—

The function of the nervous system is to maintain dynamic equilibrium within the organism and between the organism and its environment. In the latter case the equilibrium is, in the higher animals, extremely complex and is achieved mainly by means of the hemispheres. These continuously analyse and synthesise events occurring in the environment, and in correspondence with its changes establish temporary connexions between events, whether simple or complex, and various activities of the organism, in particular those of the skeleto-muscular system which is preponderantly concerned in reacting to environmental changes and is likewise itself highly differential and integrative in its response.

At present the physiology of the hemispheres exists only in outline—as a framework consisting of only a limited number of known factors, such as excitation and inhibition, their two-directional movement in the form of irradiation and concentration, and their mutual induction. The working out of the innumerable details of their intimate mechanism is a colossal problem of the future. Some observations comprising investigations carried out by Prof. Pavlov and his co-workers, subsequent to the publication of his book on "Conditioned Reflexes," are summarised.

Mechanism of Conditioned Reflexes.

The development of new temporary connexions between external agencies and definite reactions of the organism (development of conditioned reflexes) depends on the coincidence in time of the action of these agencies upon the receptor mechanisms of the organism with the various activities of the organism evoked either by external stimuli effective since birth, or by external stimuli which have become established as such after birth, or finally by changes in the internal condition of the organism (automatic stimuli). Under these conditions the formation of the connexion is a physiological law.

In order to become a firmly established, powerful, conditioned stimulus the external stimulus must begin to act slightly before the particular activity of the organism, and may even cease a few seconds before the beginning of the activity. If, on the other hand, the given activity constantly begins before the stimulus, either no connexion is established or if any is established it is weak, and survives only for a short time, and the specialised excitatory effect of the stimulus is invariably replaced by general inhibition. The biological significance of this fact is not yet clear. Where the stimulus begins to act before the given activity of the organism and continues during that activity the reflex tends to increase in strength and stability. The mechanism underlying these phenomena cannot be expressed in terms of the general properties of the cortical tissue without further investigation.

Analysis of Stimuli.

The analysing activity of the nervous system is founded in the first instance on the peripheral receptor organs, which constitute not only a receptive mechanism but also an analysing apparatus of the organism. To the peripheral points of the analyser separate points correspond in the cortex (the primary and simplest cortical mosaic). A good proof of this is that by applying definite external stimuli belonging to the same analyser—e.g., different auditory stimuli—it is possible to produce various disturbances or fatigue at different strictly localised cortical points. In this manner a very delicate method is opened up for investigating the construction of the cortical parts of the analysers, and it is possible to distinguish special areas in the cortex corresponding to the different analysers (visual, auditory, &c.) from certain other cortical elements of those analysers, which are dispersed probably over the whole mass of the cortex of the hemispheres. Not only are these dispersed elements incapable of performing any higher synthesis and analysis, but they have a very low degree of vitality, as evidenced by the rapidity of their transition into an inhibitory state under the influence of external stimuli.

Excitation and Inhibition.

The conditions determining the characteristics and the magnitude of the excitatory and the inhibitory effects of conditioned stimuli are bewilderingly complex and are only gradually being registered and classified. It is obvious that the magnitude of the positive effect is directly related to the amount of energy applied to the receptor organ. The phenomenon of summation of weak stimuli comes out clearly. The limit of normal excitability and the optimal strength of stimulation are also definite. In the case of very strong stimuli and of the summation of medium stimuli the excitatory process rapidly changes into an inhibitory one. Of course, the strength of stimulus is a relative quantity, varying greatly with individual differences of nervous system.

Since most probably the points between which the new connexions are established are in the cortex, it follows that the variations in the effect of conditioned stimuli will be dependent on the mutual relation between the different cortical points corresponding to the different conditioned stimuli, and also between the different points of those areas of the hemispheres which are affected by the unconditioned stimulus. For instance, the conditioned stimuli, based on food and acid respectively, both become connected with the chemical analyser of the hemispheres and therefore, if in the experiments both sets of conditioned stimuli are used, their effect will be determined not only by the inter-relation of the points corresponding to the stimuli, but also by the relation existing between the alimentary and "acid" points of the chemical analyser.

Psychological Types.

The accumulation of observations upon the normal and pathological activities of the hemispheres gives grounds for distinguishing various types of nervous system. There is the excitable type, which always displays partial or complete failure when confronted by difficult relations between the excitatory and inhibitory processes, and which, if the experiments are continued, ends by developing an abnormal and extremely protracted weakening of the inhibitory activity, attended by an exaggerated general excitation. At the other extreme stands the inhibitable type, which very easily becomes subjected to inhibition by stimuli either unusual or slightly stronger than usual, and which when confronted by comparatively difficult relations between the excitatory and inhibitory processes passes into a state of complete inhibition for prolonged periods of time. In between can be placed the well-balanced type which, successfully and without any signs of abnormality, establishes in all

cases a balance between the opposed nervous processes. This type comprises two varieties of animal, differing greatly from one another in external appearance—the stolid animal, always quiet, and the animal which is lively under ordinary conditions, but becomes drowsy with surprising rapidity under monotonous conditions. The latter variety has some difficulty in obtaining a balance between the two processes. This grouping of the types of nervous system corresponds closely to the ancient classification of temperaments; the excitable type—choleric temperament; the inhibitable type—melancholic; the quiet, balanced type—phlegmatic; the lively balanced type—sanguine.

MEDICAL SOCIETY FOR THE STUDY OF VENEREAL DISEASES.

A MEETING of the Scottish branch of this Society was held at Glasgow on May 2nd, when Dr. R. L. KAHN gave a lecture on the

Clinical Aspects of the Kahn Reaction.

He began by reviewing the history of the serum diagnosis of syphilis, touching upon the discovery of *Spirochæta pallida* by Schaudinn and Hofmann; the development of our knowledge of complement-fixation by Bordet and Gengou, and the evolution of the Wassermann test by Wassermann, Neisser, and Bruck. After discussing the early attempts—beginning with Michaelis in 1907—to develop a precipitation test for syphilis, and describing the work of Sachs and Georgi, Meinicke, and Dreyer and Ward, he went on to give an account of his own earlier studies of precipitation. He had shown the requirements for optimal precipitation results, when syphilitic serum was mixed with an antigen-saline suspension, to be as follows: (1) optimal concentration of antigenic lipoids in the antigen, excessive or deficient concentration preventing precipitation. (2) Proper physical state of antigen suspension. (3) Correct quantitative relation between serum and antigen suspension; the number of antigen units must not exceed the number of serum units. (4) Shaking, as a probable means of hastening collision between the interacting particles. (5) Dilution of the mixture of serum and antigen suspension should be minimal. These observations formed the basis of the Kahn test. The outstanding features of the test were: (1) relative simplicity in performance; (2) rapidity in obtaining results, the test requiring no incubation and being completed after shaking the reagents (serum and antigen suspension) for three minutes; (3) relative economy; (4) availability in all parts of the world; (5) application to research in extending our knowledge of serum diagnosis of syphilis. As to the relation between the Kahn and Wassermann tests, Dr. Kahn claimed that the interaction between serum and antigen was the same in both tests. The result of this interaction was directly visible in the Kahn test by the formation of a precipitate, while in the Wassermann test, the result being invisible, a special indicator (the hæmolytic system) was employed to render the reaction visible.

The test was highly specific for syphilis and was unaffected by pathological conditions other than syphilis. Dr. Kahn insisted, however, that it should be used only as an aid in the diagnosis and treatment of syphilis and should not supplant careful clinical study of each and every case. He concluded his lecture by discussing the additional procedures of the Kahn reaction, including the quantitative serum procedure, the qualitative and quantitative spinal fluid procedures, and the more sensitive "presumptive" procedure.

WEST SURREY HOSPITAL LEAGUE.—This organisation, which has just come into existence, seeks to establish a mass contributory scheme which in return for a contribution of 3*d.* or 4*d.* per week will entitle the contributor and his family to treatment at the Royal Surrey County Hospital or the local cottage hospitals. The Cranleigh Village Hospital and the Farnham Cottage Hospital have already joined the scheme.

Reviews and Notices of Books.

BEDSIDE DIAGNOSIS.

By American Authors. Edited by GEORGE BLUMER, M.D., David P. Smith Clinical Professor of Medicine, Yale University School of Medicine, Attending Physician to the New Haven Hospital. London and Philadelphia: W. B. Saunders Company. 1928. In three volumes totalling 2820 pages, with 890 illustrations and separate index volume to the entire work. Per set, £6 15*s.*

THE title of this work is designed to call attention to the fact that it is an attempt to emphasise the importance of diagnosis without extensive laboratory equipment. Many patients still have to be treated in their own homes, where facilities for diagnosis are limited to clinical examination with only such aids to the senses as the stethoscope and the thermometer. The authors hold that more accurate aids will never replace the older and simpler methods, while not minimising the importance of any kind of diagnostic test when it is available. Deliberately, then, they have omitted details of laboratory procedures while indicating their value, especially when combined with clinical observation.

The first volume of the book contains sections on infectious diseases, the intoxications (which are subdivided into those due to chemical poisons, those due to food poisons, and those due to acidosis and alkalosis), deficiency diseases, allergic diseases, diseases due to physical agencies such as compressed air illness and electric shock, metabolic diseases, developmental diseases, diseases of the locomotor system, and diseases of the digestive system. Diabetes mellitus is included in the section on metabolism because, although technically it should be placed with the endocrine disorders, actually its management is usually in the hands of those specially interested in the former group. The second volume contains sections on diseases of the liver, gall-bladder and bile-ducts, the pancreas, the peritoneum, the bronchi and lungs, the mediastinum, the circulatory organs, the blood-vessels, the blood-forming organs, lymph glands and spleen, and the urinary system. The third volume deals with diseases of the endocrine system and of the nervous system; here are included chapters on the muscular dystrophies and myasthenia gravis, on mental disorders and feeblemindedness. In relation to each disease the history is first described; physical signs are then set out in detail and their importance weighed; a summary is then given of the more complicated methods of diagnosis, with an assessment of their relative values, and finally the differential diagnosis is discussed. The subject is then completed by a short bibliography. Occasionally clear descriptions of actual cases are included. These are well chosen and not too numerous. An extremely high standard is maintained throughout, and the authors seem to have a happy knack of setting out just those points which are likely to be of use in difficult cases. The section on diseases of the circulatory system contains a preliminary chapter by Dr. W. J. KERR on instrumental aids in diagnosis. In this he discusses the value of X rays, the sphygmograph, the polygraph, and the electrocardiograph, pointing out that if a constant endeavour is made to discover the clinical manifestations associated with changes recorded by instrumental means, it is usually possible to dispense eventually with such aids for routine work. The diagnosis of congenital cardiac disease is dealt with very fully in a section of 150 pages containing many clear diagrams. Of the other chapters in this section those on angina pectoris and disorders of the heart-beat should prove especially helpful.

In the section on diseases of the kidney clinical methods are again emphasised. The laboratory tests which are regarded as of most value in estimating renal function are the phenolphthalein test, the two-hour renal test, and the blood-urea nitrogen. Diseases of

the endocrine system are described by Dr. Hans Lisser, who holds that the great majority of these are due primarily to disease of one gland, although other glands are subsequently disturbed. He considers that the doctrine of pluriglandular disease has led to much confusion in diagnosis besides leading to the practice of unscientific pluriglandular therapy. Subsequent chapters stress the uniglandular prominence of endocrinopathies, and give as clear and simple a picture as possible of the disorders associated with each. Their value to the diagnostician is greatly increased by excellent photographs and descriptions of actual cases. The section on disease of the central nervous system is preceded by a description of its anatomy and physiology. A special feature here is the diagrammatic representation of sections from different parts of the cortex of the brain showing the type and arrangement of cells in each; diagrams showing the distribution of cutaneous nerves are also included. The book is well bound, the print is excellent, and the illustrations carefully chosen and well reproduced. Not only is each volume indexed, but a separately bound index to the whole three volumes is provided, so that fruitless searching in the wrong volume can be avoided.

The physician will find it hard to get a finer book.

PATHOLOGY OF THE NERVOUS SYSTEM.

Nouveau Traité de Médecine. Publié dous la direction de MM. G. H. ROGER, F. WIDAL, et P. S. TEISSIER. Fasc. XXI. Pathologie du Système Nerveux: nerfs, sympathique, névroses. By Various Writers. Paris: Masson et Cie. With 415 illustrations. 1928. Pp. 900. Fr.85.

THIS fine addition to the volumes of the encyclopædic "Nouveau Traité de Médecine" contains long articles on neuralgia and on the lesions of peripheral and radicular nerves from the authoritative pen of Dr. J. Tinel. His study of traumatic nerve lesions, as was to be expected, is particularly well documented and illustrated, and includes a critical survey of the problems of causalgia. His conclusion is that this peculiar variety of neuralgia is always of reflex sympathetic origin, and that it can be treated successfully in more than one way. Periarterial sympathectomy is possibly less constantly helpful than alcoholisation of the injured nerve proximal to the lesion, the disadvantage of which, however, is the ensuing motor paralysis. A rather short, if concise, contribution is that by M. Chiray and M. Pavel on neuro-vegetative syndromes; interesting though it is, it serves at the same time to indicate how wide are the gaps in our knowledge of the sympathetic nervous system and how unsystematised still is our diagnostic insight into its affections. Comment of this kind is applicable also, possibly in minor degree, to problems of vasomotor and trophic disorder. The article by M. Parisot and M. Cornil makes very interesting reading, for acroparæsthesia, Raynaud's disease, intermittent claudication, acrocyanosis, are not exactly rare, and what is known of them is well summarised—yet there is a sad lack of precision about it all. Dejerine's intermittent claudication of the spinal cord is duly considered, but it is surely little else than a hypothetical explanation of symptoms capable of other pathogeneses. Acroparæsthesia can legitimately, we think, be made into a clinical entity, but its pathological basis stands in much need of substantiation. The sections on trophic disturbances (M. Heuyer, Prof. Marinesco) cover a rather surprising amount of clinical ground from melanodermia and sclerodermia to perforating ulcer and recurrent hydrarthrosis. Prof. Christiansen deals with the migraines; we wish he had said more of their pathogenesis—that is, of the method of production of migrainous syndromes; and more, too, of ophthalmoplegic migraine and its obscurities. Perhaps the longest and most controversial section in the volume is entitled "Neuroses-Dyskinesias," by M. Klippel and M. Weil. Embraced under this heading we find epilepsy, hysteria, neurasthenia, traumatic neurosis, the choreas, myoclonias, tics, tetany, and so forth. These articles reflect, as is perhaps natural, the viewpoints mainly of current French neurology, though we admit the catholicity of the bibliographical references; strong on the clinical and (where known) pathological side, they are undoubtedly weakest in discussion of the pathophysiology of the actual clinical symptom.

Nine hundred large pages, closely printed, devoted to but a restricted portion of the whole realm of neurology—here is a thesaurus for the neurologist to turn to for enrichment of his knowledge on both theoretical and practical sides.

HEALTH AND EXERCISE FOR GIRLS.

By ANNE M. ROBERTSON, B.A. (Hons. Lond.), with Illustrated Supplement of Practical Exercises designed by F. A. HORNIBROOK, and a Foreword by Sir BRUCE BRUCE-PORTER, K.B.E., C.M.G., M.D. London: William Heinemann, Ltd. 1927. Pp. 62. 5*s*.

IN his preface to this little book Sir Bruce Bruce-Porter writes that "those who are healthy will think in terms of health." We doubt it. Health is like social position; no one thinks of it unless there is something wrong with it. Mrs. Robertson deals with preventive medicine and physical culture from the point of view of a cultured lay woman. She puts forward the laws of health in a simple readable way; she shows that a human body needs as much care as a house to keep it in perfect order; cleanliness comes first, then diet. "Of all people that we know," she writes, "the citizens of Attica did the highest thinking on the lowest feeding. . . . The Greeks lived chiefly on porridge, wholemeal bread, and water, taking only one or two meals daily." But this diet would hardly, we think, be popular among present-day school girls or their parents. In other directions the author gives much good advice, though it is easy to see that she is swayed by the idea that intestinal stasis is the root of all evil. Mrs. Hornibrook's supplement on practical exercises for growing girls suggests that games may be overdone and physically harmful, whereas systematic exercise can do much to promote beauty of form and perfect health. The book should be of help to parents and school-teachers.

BOLLES LEE'S MICROTOMIST'S VADE-MECUM.

A Handbook of the Methods of Microscopical Anatomy. Ninth edition. Edited by J. BRONTË GATENBY, M.A., Ph.D. Dub., B.Sc., D.Phil. Oxf., D.Sc. Lond., Professor of Zoology and Comparative Anatomy, Dublin University; and E. V. COWDRY, M.A., Ph.D., Rockefeller Institute for Medical Research, New York City. London: J. and A. Churchill. 1928. Pp. 710. 30*s*.

THE last edition of this invaluable work appeared in 1921, and histologists will welcome its successor. The book is essential to the microscopist, be he biologist, botanist, or pathologist. Little of the old matter has been dropped, and much new information has been added. The section on the histological applications of measurements of acidity and alkalinity is as good as anything dealing with this highly complex business can be made; that on the culture of tissues in vitro is admirably clear in itself, and the references which it contains are sufficient to enable even the beginner in laboratory technique to embark upon this delicate branch of biological study. The section on micro-manipulative technique might with advantage have been made fuller or omitted. This is a subject almost impossible to set out in a handbook.

The value of this type of book depends largely on the skill with which its index has been compiled. Here the burden of effort seems to have been shifted entirely from the shoulders of the reader to those of the authors, and there need be no delay or disappointment in finding immediately information on any point within the wide scope of the book.

THE LANCET.

LONDON: SATURDAY, MAY 12, 1928.

RADIUM FOR CANCER.

ON the last day of 1927 we commented in these columns on the probable future of the treatment of cancer with radium and predicted relatively rapid developments. The first five months of 1928 have amply justified our confidence, and to this our recent issues have testified. In March Mr. HAYWARD PINCH, Director of the Radium Institute, in the course of a discussion at the Royal Society of Medicine, predicted that in the very near future radium would form as much a part of the up-to-date surgeon's armamentarium as the scalpel. In the same month a discussion was held by the Medical Society of London on "Advances in the Treatment of Cancer of the Cervix," and here it became clear that the chief advance lay in the successful application of radium. The same subject was discussed in April at a meeting of the London Association of Medical Women's Federation, and here it was pointed out that in the Mayo and other clinics radium was now used exclusively for cancer of the cervix, even in operable cases. In THE LANCET of April 28th we published an important address by Prof. G. E. GASK, which gave a cautious but broad review of the work now being done on the use of radium and its emanation. Prof. GASK ended his address by a deliberate endorsement of Mr. PINCH'S prediction mentioned above, and since the speaker has been personally directing some of the research prosecuted at one of the most active centres in this country his opinion must carry great weight. Last week Prof. S. RUSS, physicist to the Middlesex Hospital, made a valuable contribution concerning the physical basis of radium dosage, and to-day we are able to offer perhaps the most important contribution of all in the shape of the record of the work done at Manchester upon radium treatment of carcinoma of the tongue and mouth by Dr. G. E. BIRKETT.

This country has lagged behind America and the continent of Europe in knowledge and practice of radium therapy, a fact partly to be accounted for by the comparatively small amount of radium available in Great Britain, so that original investigation has been undertaken only by a small number of workers. The result has been that few extensive reports of actual clinical work have been published here, and few people have had the opportunity of gaining first-hand impressions of its value from actual examination of patients treated. It is, ultimately, the practitioner to whom the appeal must be made, and he, not unnaturally, will demand concrete and convincing evidence of the efficacy of radium before he will extend his demand for the treatment to be applied to the particular patients under his care. To the practitioner, therefore, we commend the evidence contained in Dr. BIRKETT'S exceedingly important article, and to Dr. BIRKETT himself we offer congratulations on his results. Last year a most encouraging report upon radium treatment of the tongue was published in the *British Journal of Surgery* by Mr. STANFORD CADE, whose work had been carried out at the Westminster Hospital. The number of patients treated at this centre was comparatively small, but served to demonstrate that radium was capable of producing in the tongue and floor of the mouth remarkable benefit as regards disappearance of the local signs of disease and restoration of function to the tongue. Dr. BIRKETT has carried the work a stage further, and has driven home the conviction that radium has produced results which could have been obtained in no other way, and that the advantages of radium must inevitably be extended to the so-called "operable" patient as well as to the "inoperable" class with which Dr. BIRKETT has mainly had to deal. This distinction of classes will disappear with the purely surgical standpoint which gave it birth. Further confirmation of this view is to be found in a comprehensive article on "Operative and Radiological Treatment of Malignant Tumours of the Mouth" by ELIS BERVEN in a Scandinavian journal,[1] and additional important evidence may be expected when the International Convention on Cancer meets in London in July.

Mastery of the technique of radiotherapy is advancing swiftly and with it comes the dawn of a new era in the treatment of cancer. Already it has been mastered in the *local* treatment of carcinoma of the tongue and floor of the mouth, of the cervix uteri, and perhaps of the breast. If radium can effectively be brought into contact with a cancer the growth can be made to disappear. The question of the treatment of glandular and other metastases is bound up with the surgical opening up of routes to the deeper parts of the body, the so-called "surgery of access." The term "surgery of access" shows that even in the new era the radiologist and surgeon must work together; most efficient of all will be the man who can combine surgical with radiological technique in his own repertory. A very brief survey of this field has recently been published by Mr. A. B. and Mr. S. M. SMITH,[2] who have necessarily derived most of their information from the publications of continental radiologists. They point out that the mere possession of radium is not in itself sufficient for the production of good results. One operator, who took over the control of the work previously done by another, obtained with the same radium and the same apparatus strikingly inferior results until he had acquired the necessary clinical judgment; and this is begotten only of experience and constant practice. This observation suggests an important corollary. It is obviously of prime necessity for the credit and advancement of radiological work in this country that an entire hospital, with adequate equipment of beds and radium, should be devoted to its study. The Radium Institute has already done much in this direction, but its resources have not been adequate for the study of the larger problems. Is it too much to hope that a radium hospital may soon spring into existence? We have reasons for believing that even this seeming miracle may before long be an actuality, and the possibility raises the further problem of the provision of radium salts. The world is known to possess a considerable supply which is not yet in therapeutic use, and a virtual monopoly of its sale is possessed by a continental company. More than this, the importation of radium into Great Britain is very seriously hampered by the imposition of a Government duty which adds a third to the initial cost. It is obvious that this should be brought to the notice of the Cabinet, since by far the most important use for radium is its application to the treatment of cancer.

[1] Acta Radiologica, Stockholm, December, 1927, viii., 473.
[2] Radium in Cancer and the Surgery of Access. By A. B. Smith and S. M. Smith. London: H. K. Lewis. 1927. Pp. 56. 3*s*. 6*d*.

Whatever its uses may be in naval guns or other engines of war it is the duty of a humane Government to give greater encouragement to the alleviation of suffering and to the saving of human life than to the means of its destruction.

THE ERROR OF BALLONIUS.

IT is now some two and a half centuries ago that GUILLAUME DE BAILLOU, a medical graduate of Paris, first coined the attractive word "rheumatism" to include a group of painful affections of the joints. Though his little book was not published until long after his death, and then only in Latin, in which it is described by the editor as a truly golden pamphlet, BALLONIUS's conception has been generally adopted and the word which he used has remained as an inclusive term covering our substantial ignorance of what it connotes. So long ago as 1864 HIRSCH conjectured that rheumatic fever was a specific infective disease, and 30 years later SINGER claimed it as an attenuated pyæmia of streptococcal origin; but while the acute rheumatism of childhood thus came to hold a distinct position within the group of rheumatic diseases, its name remains a source of confusion in the public mind; whilst the remaining conditions which share the title of "rheumatism" form an inchoate mass.

In no other group of diseases, perhaps, has the nomenclature been so confused as in the group of chronic rheumatic diseases. Three recent reports[1] from the Ministry of Health have each in turn called attention to this confusion and have endeavoured to throw some ray of light into it. The first of them, issued in 1924, was based upon the results of an inquiry addressed to insurance practitioners in England and Wales, of whom some 90 responded. Their observations are of particular value in elucidating what the term "rheumatism" ordinarily connotes in the mind of the general practitioners who are brought most closely in contact with it. One of them sent in records of 223 cases occurring in a panel practice of 4000 persons. After mature consideration of all their reports the medical officers at the Ministry, forming a committee on rheumatism, decided to classify rheumatic diseases into the three main groups: (*a*) acute rheumatism (rheumatic fever, together with subacute rheumatism); (*b*) non-articular manifestations of so-called "rheumatism" (muscular rheumatism and fibrositis); and (*c*) diseases characterised by chronic joint change. It was after considering the conflicting pronouncements of recognised authorities that this modest clinical classification was adopted; for the terms "rheumatoid arthritis," "osteo-arthritis," and "arthritis deformans" were regarded as synonymous by some and as possessing distinctive shades of meaning by others. One agent of exactitude is lacking because these conditions are rarely fatal. Although they account for a drain on health insurance funds, amounting to at least one-fourteenth of the total sum paid in sickness and disablement benefit, their names do not often appear on death certificates. When, however, rheumatism or arthritis is included among causes of death, the Registrar-General is in the habit of asking for further information, although he accepts as adequate such terms as subacute rheumatism or rheumatic gout. In the latest report from the Ministry, Dr. ALISON GLOVER once more finds himself unable to define the significance of the older terms, and quotes conflicting definitions. For himself he is willing to recognise—setting aside gout—the two broad groups of rheumatoid arthritis and osteo-arthritis, while the climacteric arthritis of women at the menopause is considered by some sufficiently clear-cut to deserve a class to itself. About 10 to 15 per cent. of the total cases of chronic arthritis are so intractable to treatment as to have produced a wide-spread impression that we are here dealing with an incurable disease. He is, however, satisfied that one-third of all cases could be cured, at least another third relieved, and that in few chronic diseases is early and proper treatment so effectual. An appendix on the treatment of rheumatic diseases abroad, written by Dr. R. FORTESCUE FOX and Dr. MARGARETHE MAUTNER, will prove valuable at a time when a more progressive attitude towards rheumatism in this country is at last being reflected in action.

DR. GLOVER'S report appears most happily on the eve of the Bath Conference. This Conference, which is proceeding under the presidency of Sir GEORGE NEWMAN, whose opening remarks appear on another page, has as one of its main objects to obtain some orderly definition of the pathological conditions covered by the term "rheumatic diseases" in order to facilitate systematic inquiry into the predisposing factors of the different groups. The Conference, however, will have proved a failure unless it recognises the value of action as well as theory. The fundamental uncertainties of diagnosis, for instance, can best be cleared up by continual and intensive study at an early stage. The situation demands that we should be pragmatists, facing problems as well as relationships, and the so-called rheumatic diseases present several which are for all practical purposes distinct. First there is the prevention, treatment, and care of heart disease in children; secondly, there is the need to prevent or diminish the damage done by focal sepsis in both adults and children; and, thirdly, there is the problem of ambulatory or palliative treatment in adults alone. The knowledge we already have is sufficient to do much good if it were properly applied. The conference at Bath may be taken as symptomatic of the new movement against rheumatism which, although more systematically conducted on the continent, has had its origin in this country. If it serves to concentrate attention on the practical and immediate aspects of the question it cannot fail to bear good fruit.

[1] Reports on Public Health and Medical Subjects: No. 23, The Incidence of Rheumatic Diseases. 1924. 2*s.* 6*d.* No. 44, Acute Rheumatism in Children in its Relation to Heart Disease. 1927. 1*s.* 6*d.* No. 52, A Report on Chronic Arthritis with Special Reference to the Provision of Treatment. By Dr. J. A. Glover. 1928. 1*s.* 6*d.*

PULMONARY ATHEROMA.

ACQUIRED disease of the pulmonary artery and its branches is a rare post-mortem finding, but still rarer is diagnosis of the condition during life. Nevertheless, evidence is accumulating that this lesion may be associated with a fairly definite clinical syndrome. AERZA, ARRILLAGA, and other South American writers have recorded under the title of "cardiacos negros" a group of cases in which the principal clinical manifestations are intense cyanosis with dyspnœa, hæmoptysis, somnolence, and polycythemia. Autopsy revealed atheromatous changes and dilatation of the pulmonary artery with extreme hypertrophy and dilatation of the right heart. These patients gave a history of having suffered from some chronic pulmonary complaint for many years before developing cardiac symptoms, and it is suggested that the characteristic lesion may be attributed to the effect of chronic emphysema on a pulmonary artery which

has been weakened by some intoxication or chronic infection such as syphilis or malaria. A very similar clinical syndrome was described by ROGERS in natives of Bengal in whom a syphilitic form of pulmonary atheroma led to enormous hypertrophy and dilatation of the right heart with dyspnœa and cardiac dropsy. In this country COOMBS, CLARKE, HADFIELD, and TODD [1] have recently recorded five cases of extreme cyanosis which post-mortem showed advanced changes in the pulmonary artery and its branches. They point out that in some of these cases there is no evidence of syphilis or of any antecedent lung disease. They suggest that another possible ætiological factor may be an inborn defect in the wall of the pulmonary artery, and that the dilatation and hypertrophy of the right heart which, as they remark, is greater than in any other acquired disease of the heart or lungs, is attributable to the impairment of the elastic properties of the arterial wall. When the cyanosis dates from birth, it is unlikely that a more precise clinical diagnosis than that of "congenital heart disease" will be possible, for it is only in such congenital lesions as pulmonary stenosis and patent ductus arteriosus that the auscultatory phenomena are sufficiently distinctive to enable the physician to determine more precisely the anatomical condition. It might be expected that dilatation or sclerosis of the pulmonary artery would always give rise to a basal murmur, but the cases reported by COOMBS and his associates show that this is not so, the murmur in some of their cases was confined to the region of the apex-beat and suggested a left-sided valvular defect. When, however, the physical signs of pulmonary or cardiac disease are insufficient to account for the presence of an intense cyanosis which first makes its appearance in adult life, pulmonary sclerosis is a possibility which deserves consideration, and corroborative evidence from X ray examination should be sought, since both the widening and the abnormal density of the shadow of the pulmonary artery are striking features. The facial appearance of these patients suggests polycythemia vera, and it is not improbable that some of the patients in whom that diagnosis is made, in the absence of splenic enlargement, are really suffering from pulmonary sclerosis. COOMBS and his co-workers do not regard mechanical stress as the primary factor in any of their own cases, though admitting that it is probably responsible for the arterial lesion in the type described by ARRILLAGA which supervened on a chronic pulmonary lesion. Somewhat similar though less pronounced changes in the structure of the pulmonary artery are found in old-standing cases of mitral stenosis and are presumably to be explained by the mechanical strain which this particular valvular lesion throws on the artery.

[1] Quarterly Journal of Medicine, 1927, xxi., 51.

EXAMINATIONS FOR MENTAL NURSES.—The General Nursing Council for Scotland have replied in an open letter to the resolution passed by the Royal Medico-Psychological Association on Nov. 17th, 1928. This resolution was designed to secure that nurses who had passed the Association's examination for proficiency in mental nursing should be entitled to be placed on the register of the G.N.C., the examination being subject to such supervision and standard as the G.N.C. might see fit to impose. The G.N.C. for Scotland agree that it is regrettable that there should be two authorities conducting examinations, and in view of the fact that the Association desire to continue to issue their certificate they suggest that the preliminary examination of the General Nursing Council should be accepted by the Association, and that a final examination might be arranged jointly by the two bodies. It is suggested that a conference should take place for discussion of this proposal.

Annotations.

"Ne quid nimis."

THE NEW PHARMACOLOGY.

FOR 65 years the British Pharmaceutical Conference has issued with regularity a Year Book of Pharmacy, containing a record of the annual increase in our knowledge of drugs and their actions. It has been for the most part no hardship for the medical profession or indeed for the public to wait a year before these things were made known; they did not seem to touch human health and happiness very closely. But with the recent astonishing development of pharmacological research it has now been felt undesirable for the data so obtained to be held up for an annual publication; hence the appearance of the first number, dated January to March, 1928, of a *Quarterly Journal of Pharmacy and Allied Sciences*, which incorporates the Year Book of Pharmacy, and is published [1] by direction of the Council of the Pharmaceutical Society of Great Britain. In an introductory note to this first number Sir John Rose Bradford makes it clear what the new outlook means. Fifty years ago pharmacology was cultivated only by a small minority of teachers and investigators—Sir John singles out for honourable mention Christison and Fraser in Edinburgh, Brunton, Cash, and especially Ringer in London—and much of the therapeutic pessimism not uncommon a generation or two ago was due, as he points out, in part to the uncertain results then obtained with many drugs that were in truth valuable, but which failed owing to variation in potency. Digitalis is cited as a good instance, and the first article in this new publication deals with the pharmacological assay of digitalis by different methods, in which evidence is given to show that the international powder is a practicable standard for digitalis leaf and tincture in Great Britain. Its adoption would entirely remove from the practitioner's mind the disturbing reflection that failure of the heart to react to his treatment may be due to the inefficiency of the drug supplied to him. Sir John describes the preparation of the active substances elaborated by the ductless glands as an achievement of outstanding importance, for here, he says, we are dealing with a pharmacy that is almost indistinguishable from the normal physiology of the organism. The successful synthesis of these substances opens up a further vista of possibilities. Pharmacy, so long regarded as ancillary to medicine, has almost reached the time when the servant may be said to be as great as her master. This result is very largely due to the Pharmaceutical Society, established in 1841 for the purpose of advancing chemistry and pharmacy, which has achieved so much in spite of being a voluntary association with only a moral obligation to join its ranks. The school of pharmacy, which is now a school of the University of London, is more than 85 years old, and the research laboratories in connexion with it, founded in 1888, were extended in 1926 by the institution of a pharmacological laboratory for research on the standardisation of drugs and preparations by biological methods, with the addition last year of a department for the testing of material for vitamin content. It is the rapid development of the laboratory in the latter respect which will make the quarterly issue a matter of eager expectation. In this issue, for example, appears amongst other relevant articles, a note on a method of assay of the antirachitic vitamin D, by which the potency of any substance can be expressed in terms of this standard. The standard adopted by the Pharmaceutical Society is such that a daily dose of not more than 0·0001 mg. will produce complete healing of rickets induced in rats under the conditions described. The *Quarterly Journal* remains in the able hands of Dr. C. H. Hampshire, editor of the Year Book, with the assist-

[1] London: The Pharmaceutical Press, 17, Bloomsbury-square, W.C. 10*s.* per copy; 30*s.* per annum if paid in advance. Binding covers free.

ance of an editorial committee of which Mr. J. T. Humphrey is chairman, and the medical members of which are Dr. J. H. Burn, Dr. H. H. Dale, and Dr. W. E. Dixon. The success of the new publication is assured.

THE DOG AND CAT IN DERMATOLOGY.

So far as we know, the only cutaneous diseases that can be contracted from the dog or cat are scabies and ringworm, but in these days of domestic pets the chances of such infection are by no means remote. Hudelo and Rabut [1] state that the scabies of dogs, which is caused by an acarus morphologically similar but smaller than that of human scabies, is less common than the feline variety, which is due to the *Notaedris cati*, an even smaller parasite. Both infections seem to require prolonged and intimate contact with the offending animal—e.g., in bed—and neither parasite burrows in the human skin, thus rendering diagnosis a matter of doubt and difficulty. The presence of isolated intensely pruriginous papules, capped sometimes by a minute blister, usually on the flexor aspects of one or both forearms, or on the abdomen, or one shoulder, should arouse the suspicions of the practitioner and, in spite of the absence of acarine runs in the finger webs, on the breasts, or the penis should suggest an atypical scabietic infection. The possibility of animal transmission may make it necessary to examine the animal suspected. In the dog, according to Hudelo and Rabut, scabies is manifested by fine desquamation on the anterior borders of the ears; in advanced cases there is patchy loss of hair and an eruption of papules and pustules over most of the body. In the cat it may set up a generalised inflammation with greyish crusts spreading from the scalp, which is denuded of its hair, as far as the neck, such a condition being often severe and sometimes even fatal. A characteristic sign is coexistent infection of the paws from violent scratching of the ears. The treatment of scabies contracted from a cat is simple and the infection subsides almost as soon as the animal is removed. The canine variety is not so easily eliminated, and the inunction of sulphur or some antiparasitic ointment is usually necessary. As regards ringworm, the identification of the various species will demand a careful cultural technique, which Sabouraud has elaborated in his famous work, "Les Teignes." There are three great classes, the trichophytons, the microsporons, and favus. They may attack the glabrous skin and the hair both of the scalp and beard, and recently the important observation has been made that follicular eruptions on the back and chest of children are sometimes attributable to trichophytides, which have reached this secondary site by way of the blood stream.

THE STORAGE OF SPERMATOZOA.

WE have still much to learn about the physiology of the male reproductive system. Dr. Robert M. Oslund [2] tells us that in the course of a series of experiments involving ligation and resection of the vas deferens in animals he became interested in the question of the storage of spermatozoa. He found that in the seminiferous tubules there occurs an accumulation of colloid material derived from the breaking down of spermatocytes and spermatids. This colloidal fluid moves slowly along the tubules, its movement being determined by the vis a tergo rather than by active contraction on the part of the seminiferous walls. When the fluid enters the epididymal canal it comes under the action of the ciliated lining, but in the author's opinion the influence of this is insignificant in comparison with the force exerted by the accumulation of spermatic material behind it. The motility possessed by the spermatozoa probably does not exercise much influence on the progress of the fluid or of the spermatozoa through the tubules. Benoit has reported that the epididymis secretes a substance which nourishes and activates the sperm and states that spermatozoa are more active in the tail of the epididymis than they are in the head. Oslund was not able to confirm these observations and believes that the main motive power of the spermatozoa is derived from the pressure of secretion from behind. As far as he could see there is in man very little storage of spermatozoa anywhere in the genital tract. Certainly the vesiculæ seminales cannot be regarded as reservoirs and spermatozoa found within them in cadavers must be regarded as invaders rather than as normal inhabitants. As the result of the constant passage of sperm from the testis towards the urethra spermatozoa are found frequently in the urethra and in the urine. During coitus there occurs a speeding up of the movement of the sperm along the vas deferens. This is due to contraction of the muscles of the epididymis and vas deferens including the ampulla which decreases the volume of the tubules and forces spermatic fluid towards the urethra. These contractions are observed after stimulation of the hypogastric nerves; they also occur spontaneously and more especially during coitus when they supply the chief mechanism for the transportation of spermatic fluid.

[1] Paris Médical, Jan. 21st, p. 56.
[2] Jour. Amer. Med. Assoc., March 17th, 1928.

THE BLOOD IN TUBERCULOSIS.

AFTER a cytological study of the blood in patients suffering from pulmonary tuberculosis, R. S. Cunningham and Edna H. Tomkins [1] claim that in this disease the white cells undergo very definite changes in number and character, and in particular that the monocytes are always multiplied. The "supra-vital" technique introduced by Sabin was employed in their investigation, as it facilitates differentiation between the monocytic and lymphocytic types. So convinced are these observers of the importance of this change that they would hesitate to accept a diagnosis of pulmonary tuberculosis if the patient's blood failed to show an elevation of the monocyte count. The lymphocytes show a reciprocal relationship to the monocytes. Thus the latter increase during infection while the former decrease, the monocyte serving as an index of dissemination and the lymphocyte of resistance. A progressive decrease of the lymphocyte count suggests a grave prognosis. It is possible that some specific toxin of tuberculosis acts as a stimulant to the monocytes and a depressant to the lymphocytes, so that the ratio between the two types of cell may thus be used as an index of the relation of the processes of infection to those of resistance. Enumeration of the white cells of the blood may thus, they consider, be useful in both diagnosis and prognosis.

THE BEGINNINGS OF LOCAL ANÆSTHESIA.

THE inestimable benefit that cocaine has proved to be as a local anæsthetic in eye surgery and the perhaps equal services that its synthetic derivatives now afford for infiltration anæsthesia render the history of the first employment of the drug of considerable interest. It is to Dr. Carl Koller, formerly of Vienna, now of New York, that ophthalmic surgeons owe the discovery of its practical application. In a personal communication he informs us that long before 1884 he had been conducting experiments with such substances as chloral, bromides, and morphia in the hope of obtaining an efficient local anæsthetic for the eye, but without success. The alkaloid cocaine had been isolated from coca leaves brought from Peru so long ago as 1860, and its numbing effects on the nerves of the tongue had been recorded, but lost sight of in view of the overshadowing effects of the drug on the central nervous system.

"When in the course of preparing for these physiological experiments," writes Dr. Koller, "I realised that I had in my possession the local anæsthetic which I had been previously striving for, I went at once to Stricker's laboratory, made a solution of cocaine, and instilled a drop in the

[1] American Review of Tuberculosis, March, 1928.

eye of a frog, and afterwards of a guinea-pig. I found the cornea and conjunctiva anæsthetic—that is, insensitive to mechanical, chemical, thermic, and faradic stimulation. Afterwards I repeated these experiments on myself, some colleagues, and many patients. I made the first preliminary communication relative to this subject on Sept. 15th, 1884, at the Heildelberg meeting of the German Ophthalmological Society. Dr. Brettauer, of Trieste, read a short paper which I had given him together with the solution to take to the meeting, and showed the experiments. On Oct. 17th of the same year I read before the Gesellschaft der Aerzte of Vienna a more elaborate paper which was published in the *Wiener Medizinische Wochenschrift* for Oct. 25th, 1884, and translated in THE LANCET (London) of Dec. 6th, 1884, and the *New York Medical Record*."

The news of the new drug which did away with the necessity of a general anæsthetic in nearly all eye operations spread with remarkable celerity. Already before the end of the year 1884 three papers on it were read before the Ophthalmological Society of the United Kingdom by the late Arthur H. Benson, the late E. Nettleship, and the late Walter Jessop.[1] Nettleship had already operated with cocaine for 18 senile cataracts, besides numerous other operations, his first operation having been on Oct. 10th, less than a month after Dr. Koller's paper had been read at Heidelberg. Its use soon became and has remained universal among ophthalmic surgeons. At Dr. Koller's suggestion the drug was shortly afterwards utilised by his laryngological colleagues. The employment of infiltration anæsthesia was a subsequent development. It is fitting that these facts should not be forgotten during the lifetime of the discoverer.

CHEMICAL CHANGES IN CULTURE MEDIA.

IT has been a reproach for many years to the bacteriologist that he has been too much occupied with certain aspects of his studies, particularly with pathogenicity and special differentiating tests, to pay proper attention to the nature of the chemical changes taking place in the media which he employs. These media are of a very complicated character, the difficulties of their investigation are correspondingly great, and progress cannot be other than slow. Reliable methods of estimation are, of course, a necessary precursor for any clear advance, and a recently issued report [2] embodies studies of this order and adds to the number of trustworthy methods now available. By the use of Foreman's alcohol titration method and its modifications it is possible to obtain what the authors call reliable balance-sheets, in which the total values for constituents estimated in groups are equal to the sum of the values for the subgroups. The methods used are described in the text. The "total alcohol value" of "alcohol extracts" made from such fluids as meat extract media, can be successfully differentiated into subvalues for the different classes of, and radicles embraced by, new rapid methods, and the results can be checked by balance-sheet methods. The medium used was a plain ox heart extract with tap water and without salt or peptone additions. The *Staphylococcus aureus* was grown in such extracts of differing concentration and the chemical and bacteriological changes were studied under different conditions. These changes are complex and only a few points can be noted. The curve of bacterial growth is characterised by two peaks, the first reaching its maximum on about the fourth day and the second on about the twenty-eighth day. Between them is a period in which the numbers are small, while after the second peak the numbers again decrease. These phases correspond to definite chemical changes. For example, during the first period of rapid growth there is the production of volatile bases alone, unaccompanied by any appreciable development of acids. Apparently amino-acids are not the source of the volatile bases. Before this first phase is completed the second phase, that of the production of volatile and non-volatile acid radicles, in approximately equal proportions, commences. In the third phase non-volatile acid radicles alone are produced. The second period of growth (about the twenty-eighth day) is chiefly characterised by the conversion of non-volatile acid radicles into equivalent amounts of volatile acids, and the content of volatile acids reaches its maximum by the time the second peak of growth has been reached. The inorganic phosphorus content also varies in relation to the organic phosphorus content. These and other chemical changes are best studied in relation to the charts shown.

A further report [3] by the same authors deals with the effects of certain salts upon changes in hydrogen-ion concentration, and with the rôle of creatinine in the control of reaction in cultures. The points discussed, which are of considerable technical interest, can only be appreciated by a study of the report itself.

COMPARATIVE IMMUNITY.

NEW journals devoted to one or another aspect of the medical sciences continue to emerge at frequent intervals. Among the latest is the *Archives roumaines de pathologie expérimentale et de microbiologie*, published in French, in Paris, and edited by Prof. J. Cantacuzène, of Bucharest, who occupies the greater part of the first number with an instalment of his researches on the mechanism of immunity in the marine gephyrean worm *Sipunculus*. It is a classical field, for it was when he was working with similar material, and when, as he tells us, his family had gone to a circus to see some extraordinary performing apes, that the revelation came to Metchnikoff, at Messina, in the early days of 1883, that phagocytosis was a means of protection against injury and disease. In the special case which he has investigated Prof. Cantacuzène shows that foreign bodies, such as bacteria or sheep's red corpuscles, injected into the cœlomic cavity are enveloped in leucocytes and gathered up into masses by the mucous secretion of the "urns," enormous ciliated cells whose function has long been something of a mystery. By these means the cœlom is soon cleared, and one is reminded of the way in which leucocytes and platelets clear the blood and the omentum clears the peritoneal cavity in mammals. Specimens of *Sipunculus* which have previously been vaccinated react in the same way, but quicker, the secretion of the "urns" is more acid and hence more adhesive and, in addition, agglutinins and cytolysins are produced, though, as is usual in invertebrates, the cellular side of the defence is much more active than the humoral. From which it may be surmised that the protective effect of vaccination is likely to be less specific than in the higher vertebrates. Such has indeed lately been shown by Chorine,[4] who found that various bacteria would immunise the caterpillars of the wax moth *Galleria* against the variety of *Bacillus subtilis* which is pathogenic for it.

TUMOURS OF THE LUNG.

MEDIASTINAL tumours have always had special interest, clinically and pathologically. Their increase in recent years and the recognition that the majority are not sarcomas of mediastinal glands but carcinomas arising from the larger bronchi makes any further information about them of value and we welcome a survey by Prof. T. Shennan of his experience in Aberdeen.[5] The 31 cases accumulated in some 12 years include a spindle-cell sarcoma of mediastinal glands, a lymphosarcoma of thymus, 4 tumours arising in the thymus with a structure resembling lymphadenoma, and 3 secondary thyroid carcinomas; the

[1] Trans. Ophth. Soc., 1885, vol. v.

[2] The Changes Produced in Meat Extracts by the Bacterium *Staphylococcus aureus*. By F. W. Foreman and G. S. Graham-Smith. Food Investigation Board Special Report. No. 31. 1928. H.M. Stationery Office. 2*s*.

[3] The Control of Reaction in Cultures and Enzyme Digests. Food Investigation Board Special Report. No. 32. 1928. H.M. Stationery Office. 9*d*.

[4] Comp. Rend. Soc. Biol., 1927, xcvii., 1395.

[5] Jour. of Path. and Bact., 1928, xxxi., 365.

other 22 are carcinomas of lung. Nine of these are obviously epithelial in structure, while the other 13 belong to the well-known type with small oval cells which Prof. Shennan agrees with Mr. W. G. Barnard in interpreting as carcinomas. As usual, males predominated, only 4 of the cases being in women; in their occupations there is nothing suggestive, such as Dr. J. B. Duguid [6] found in Manchester. Anatomically however, it can hardly be without significance that some old-standing tuberculosis or fibrosis was present in at least 13 cases, and Prof. Shennan notes that many of the tumours arise from the main bronchi on which the chief incidence of influenzal catarrh falls; the suggestion has been made before that the recent increase in the prevalence of these tumours (which incidentally is not perceptible in the Aberdeen data) has something to do with the influenza epidemics of 1918 and 1919. Prof. Shennan increases the value of his paper by adding brief accounts of the clinical histories to his detailed anatomical and histological descriptions. The protean variety of the symptoms is particularly striking. One man dies suddenly with a profuse pulmonary hæmorrhage, another after many months of vague ill-health in which no localising symptoms were disentangled. The proneness of lung carcinomas to metastasis in the central nervous system is shown by the number of patients whose main or only symptom was due to this involvement; it might be headache or sciatica. It is also obvious that in a good many cases death is actually caused by secondary inflammations of the lung, due no doubt to the partial or complete blocking of the bronchi by the growth. In several instances profuse sweating, especially at night, was a prominent symptom.

ANÆSTHETICS IN GERMANY.

A PERUSAL of recent German medical periodicals brings to light the unusual amount of interest now being bestowed in that country on the subject of anæsthesia. Together with other continental countries Germany has suffered, and is still suffering, though to a diminishing extent, from the absence of medical men whose sole practice and chief interest is in anæsthetics. As a natural consequence the surgeon in those countries relies, much more than the English surgeon, on local analgesics whose application and effects he can himself study and control than on general anæsthetics, the safe administration of which requires the individual care of another skilled person. It was natural in these circumstances that "twilight sleep" should have its origin in Germany and find there its warmest support; for here appeared to be a method which provided many of the advantages of general anæsthesia without the same necessity for skilled attention to the patient during operation. In general surgery, however, "twilight sleep" has not provided a really satisfactory substitute for the administrations of skilled anæsthetists, and it has not, we believe, largely supplanted local analgesia in the majority of German clinics. An improved version of this method is said to give highly satisfactory results,[7] and the latest aspirant for answering those demands of the German surgeon which cannot be met by local methods is avertin. A large number, some thousands, of operations have now been conducted with the help of this rectal anæsthetic and the reports tend to be more uniformly appreciative than they were at first. A number of surgeons in whose clinics it has been widely employed have replied to a questionaire, and their answers show a large measure of agreement in commendation.[8] Some surgeons, however, regard the drug as too dangerous to be employed as a sole anæsthetic, although they approve of it warmly if used in small doses for the induction of unconsciousness and for the provision of a light narcosis which is rendered sufficient by very small amounts of inhalation anæsthetic. There seems to be universal agreement as to the pleasant nature of the induction of anæsthesia with this drug, and also as to the absence of deleterious after-effects. We are aware that avertin is now on trial at one or two London hospitals, and we look forward to an account of its estimation in this country.

[6] THE LANCET, 1927, ii., 111.
[7] Münch. med. Woch., April 6th, 1928.
[8] Deutsch. med. Woch., April, 1928; also Munch. med. Woch., April 6th, and Medizin Klinik, April 20th.

TOBACCO ANGINA.

THE effect of tobacco-smoking on the body, and especially on the heart, is of particular and often of personal interest to medical men. Strangely enough, as Dr. Eli Moschcowitz [1] has lately pointed out, not many first-hand observations have been made on the effect of smoking on the heart, and most of the statements in current text-books bear the imprint of literary legacies. Whilst recognising that tobacco-smoking may bring about varying conditions such as tachycardia and auricular or ventricular extra-systoles, Dr. Moschcowitz has paid special attention to the pains simulating angina pectoris which occurred in four of his patients, probably as a result of excessive smoking. The features distinguishing tobacco angina from true angina pectoris are that it is more intense and of longer duration than true angina and is usually accompanied by little or no disturbance of the cardiac function; further that unlike true angina the pains are more likely to arise during complete rest, and may even awaken the patient from a sound sleep. An interesting feature to which Sir Humphry Rolleston has also drawn attention is that patients who have once had tobacco heart may show signs of sensitisation to tobacco smoke, and pain may be induced by smoking a cigarette, or even by being present in a smoke-laden atmosphere. The anginoid pains may arise in patients who have apparently healthy hearts, or in those who have previously shown signs of coronary or aortic disease. In both types the use of tobacco should be absolutely forbidden. It is not enough merely to reduce the amount of smoking. The pains do not cease immediately after the withdrawal of tobacco, but may persist for periods of time varying from a week to three months. The mechanism of tobacco angina is not known, but it is probably due to the constricting action of tobacco on the coronary blood-vessels. The pain bears a strong resemblance to true neuralgia in that it is not induced by exertion or emotion. All four patients described by Dr. Moschcowitz had smoked for many years; their ages varied from 35 to 62, and one was a woman who had smoked cigarettes to excess. Neither the variety of the tobacco used nor the form in which it is smoked seems to be a factor in the causation of the pain.

THE ROYAL ACADEMY.

THE 160th Exhibition of the Royal Academy of Arts was opened at Burlington House last Monday and has received the modified congratulation of the critics, who find the level of accomplishment high but the æsthetic interest moderate. Save that the practice of medicine and the art of drawing have many relations which always repay attention, the display in itself appealed to no special medical interests. First there is a dearth of medical portraits, which is to be regretted from the artistic point of view, since the head of the distinguished physician or surgeon very usually lends itself to especially fine treatment. For an intimacy of presentation is obtained here by the painter which is denied him when depicting public men whose features are familiar, while even in official medical portraits the dress has not the aggressive quality of full uniform, court attire, or mayoral robes. Secondly, and not to be regretted at all, the subject picture with a medical theme has disappeared. This is not an endorsement of the view that a picture should be without a story, a view that is flatly contradicted by some of the finest pictures in the world; it is a word of thanks for being spared the kind of medical story in paint that is designed to be moving, but which so

[1] Jour. Amer. Med. Assoc., March 10th, p. 733.

rarely moves. There is, however, in the exhibition one direct appeal to medicine—namely, that furnished by six works of the late Mr. Charles Sims, all of which may be termed experiments in colour thinking. Mystical but purposeful, orderly in their incoherence, and pathetic in their brave attempt to tell what cannot be told and to interpret what cannot be known, we are not surprised to hear that there was official reluctance to display them. If this is so the contrary decision is a matter of congratulation; it was inevitable that the obscurity of these pictures should deprive them of popular appeal, and perhaps inevitable that some should regard them as the fruits of an aberrant mind, but no student of mental science would endorse this view. It is noticeable that in connexion with Sims's fantasies references have been made in the lay press to the colouring and composition of the work of El Greco, to the themes and treatment in Blake's illustrations, and to the well-known allegorical pictures of Watts, some of which can be seen in the Tate Gallery. It may be that these references were dictated with some idea of reconciling the work of Sims with that of more comprehensible but comparable artists, yet a large school of modern neurologists would not require to fall back upon any such matter-of-fact explanation as a proof of the sanity of these pictures. Whether Sims is able to communicate through his canvasses the thoughts that inspired him must depend upon the receptivity of the spectator, but his lovely attempts to do so merit admiration and sympathy.

THE CONTINENTAL ANGLO-AMERICAN MEDICAL ASSOCIATION.

IN our news columns appears a report of the first meeting of the Continental Anglo-American Medical Association which has been held since 1914. This Association was founded in 1889 to serve as a bond of union between British and American practitioners on the Continent of Europe and in Northern Africa, with the further object of furnishing useful information to the travelling public. For many years before the war the Association played its rôle in both respects; the membership was then about 125, whose names, addresses, and consulting hours appeared on a leaflet issued periodically as a directory by the Association. An annual dinner was arranged in Paris and the list of members enabled scattered practitioners to keep in touch with each other, especially with a view of knowing to whose care patients might be safely recommended when changing from one foreign resort to another. Five years ago, when the question of formal dissolution came up, we confessed to a sympathy with the minority who desired continuance, and expressed a feeling that if this minority chose to form the nucleus the opportunity of further association would arise. We are happy to see that this has now come about, and we warmly commend the Association to all English-speaking practitioners abroad. At present the names of those practising in Switzerland do not appear on the list.

THE next session of the General Medical Council will commence at 2 P.M. on Tuesday, May 22nd, when Sir Donald MacAlister, the President, will take the chair and give an address. The Council will continue to sit from day to day until the termination of their business.

Dr. R. King Brown, for 27 years medical officer of health for Bermondsey, is shortly to retire owing to ill-health.

THE voluntary hospitals have lost a good friend in Sir John Craggs, whose death in his seventy-third year occurred on May 2nd. A chartered accountant of high standing and a member of the Council of the Institute, he placed his services without reserve at the disposal of the Council of King Edward's Hospital Fund, was one of its honorary secretaries for a period of ten years (1897–1906), and was then elected to its Council. His book on Rate-supported *versus* Voluntary Hospitals may still be read with benefit by any who are studying the intricacies of a many-sided problem; his own conclusion was that in almost every respect the voluntary system scores in economy and efficiency. Sir John Craggs was especially interested in researches into tropical medicine. He was vice-president of the Seamen's Hospital Society for 26 years, and his benefactions to the London School of Tropical Medicine included a travelling scholarship and a substantial annual prize. He financed the antimalarial investigation carried out on the Roman Campagna.

Modern Technique in Treatment.

A Series of Special Articles, contributed by invitation, on the Treatment of Medical and Surgical Conditions.

CCLXXV.—TREATMENT OF RICKETS.

II. CURATIVE MEASURES.*

THE child who has developed rickets may be in apparently good general health and evidence of the disease may only be discovered on careful examination, or he may show all the classical signs of an advanced case. If treatment can be applied in the early stages, it is usually possible to remove all evidence of disease within a few months, but if severe deformities have occurred, they will persist long after the active stage is passed and possibly throughout life. If this is explained to mothers, even those whose coöperation is not readily given will generally try to ensure sufficient treatment for the child.

Treatment of the General Health.

Most rachitic children require treatment of the general health as well as treatment of the rachitic process itself, and the bone lesions are frequently "healed"—i.e., the bones and osteoid tissues are satisfactorily calcified—some time before the general health reaches normal. Treatment of the general health usually includes adjustment of the diet, since in these cases there has often been much dietetic mismanagement. After the age of weaning I usually advise the inclusion in the diet of one pint of cow's milk daily, three to five eggs weekly, and from the age of 12 months, meat also on three to seven days in the week. Outdoor life usually brings about an improvement in general health, in contentment, activity, and appetite, which can seldom be attained without it. In summer it will bring about healing of the bone lesions in all cases, but if the exposure to sunlight is scant healing may be slow unless other treatment is also given. Other means of improving the general health frequently include the provision of proper hours of sleep, suitable clothing, and, if possible, massage, but these are not directly curative of rickets.

Treatment of the Defective Calcium-phosphorus Metabolism and so of the Rachitic Bone Lesions.

The defective calcification of the bones is part of the active process of rickets—i.e., of the disturbed calcium-phosphorus metabolism. To renew normal calcium deposition in the bones we supply vitamin D in liberal amount, and this can either be given by mouth or be formed in the skin by exposure of the patient to ultra-violet light. Healing of the bone lesions usually proceeds at the same rate, whether the vitamin is provided by cod-liver oil administration or by artificial ultra-violet light therapy, or by exposure to sunlight. I have the impression that if the child does not get out of doors artificial light therapy produces greater improvement in the general health than does cod-liver oil alone. Cod-liver oil,

* Part I., dealing with Prophylaxis, appeared in THE LANCET last week.

begun gradually, can be used in double or more than double the prophylactic dose, say 1 to 1½ drachms of a 50 per cent. emulsion, or for an older child 1½ to 2 drachms of cod-liver oil and malt, three times daily. With adequate treatment an X ray plate of the long bones usually shows evidence of calcification of the osteoid tissue in 10 to 21 days, and calcification is complete in times varying from one month in very slight cases to perhaps four months or longer in severe cases, but, of course, rachitic deformities may persist for years or even throughout life. There is no evidence that more rapid effects can be brought about by the use of concentrated preparations of vitamin D, but when more is known as to suitable dosage these should prove a definite asset in the treatment of older children who dislike cod-liver oil or in infants with enteritis or digestive disturbance.

The Prevention of Bone Deformity.

Until the bone lesions are healed—i.e., until the bones are properly calcified—steps should be taken to avoid the production of any fresh bone deformities. Thus unless proper support is given to the back a chest sulcus may be increased by the child having a pillow under its head, or by its sitting in a hunched-up position with the back curved. Curvature of the bones of the lower limbs is often increased by bearing the weight of the body, and, in order to prevent this, all children able to stand should have a light straight splint, projecting several inches beyond the foot, applied to the outer side of the leg. This should be removed at night, or at other times when the child is not likely to try to stand, and only applied with the object of preventing standing while the bones are abnormally soft. The purpose of the splint should be explained to the mother. As soon as the X ray plate shows calcification to be nearly complete the splints can be discarded. If no radiograms can be obtained, splinting should be continued for, say, one and a half to four months after the beginning of treatment, according to the severity of the case, but the period is a matter of guesswork if no plate is available. If the case is only seen at the end of the summer, healing will probably be already advanced or possibly complete. There is one small point which may be helpful in such cases—if the costochondral junctions are of normal size while enlarged epiphyses and bending of the long bones are still present, this suggests that healing is complete—since a rachitic rosary disappears under treatment more quickly than enlarged wrist epiphyses—and in such cases it is unnecessary to prevent the child standing.

Orthopædic Treatment.

Three stages of the disease have been mentioned: the *active stage* of disturbed calcium-phosphorus metabolism and deficient deposition of calcium salts in the growing bones; the *healing stage* during which the blood-calcium and blood-phosphorus return to normal and calcium salts are laid down in the osteoid tissue of the bones as well as at their growing ends; and the *healed stage* at which the bones are fully calcified, but deformities may still persist though the bones tend steadily to recover normal shape. Provided no recurrence of rickets takes place the amount of improvement which may occur in bent long bones in the course of one to two years is remarkable, and except in cases of severe deformity operative treatment is undesirable before there has been time to observe what improvement is occurring as the result of growth. In many cases it finally proves unnecessary, even when the initial deformity was considerable. If special appliances are required—e.g., on account of knock-knees and lax ligaments at the knee-joint—the advice of an orthopædic surgeon should be obtained.

Treatment of Rickets Associated with Other Diseases.

There are certain diseases with which rickets is commonly associated. Spasmophilia is nearly always accompanied by rickets; in fact, it may be regarded as part of the symptom-complex of rickets associated with low blood-calcium instead of with low blood-phosphorus, the common form; hence antirachitic treatment should be given to all such cases, together with special treatment for any urgent symptoms such as convulsions or laryngospasm. The administration of calcium chloride, the drug most commonly used for rapid control of the symptoms of spasmophilia, does not *cure* the disease, and the child should be kept under observation until it has had an adequate period of antirachitic treatment.

Many cases of rickets first come under observation for bronchitis or other respiratory affections to which such children are particularly susceptible, and care should be taken to look for evidence of the underlying cause in such cases and to give specific antirachitic treatment whenever the presence of rickets cannot be excluded. Infants and young children with scurvy not infrequently show evidence of other dietetic errors, and as in both rickets and scurvy there is enlargement of the rosary and of the epiphyses, it is frequently difficult to be sure whether one is dealing with scurvy alone or with scurvy and rickets—hence it is as well to give a liberal supply of both vitamin D and C in such cases. In cases of chronic intestinal indigestion or of cœliac disease with defective absorption of fat, cod-liver oil is not a suitable agent for prophylaxis or cure of associated rickets, and in such cases a concentrated vitamin D preparation (not in oil) or light therapy is indicated.

There is a close association between nephritis in infancy and early childhood and the development of rickets, and authorities are not agreed as to whether the bone changes which are associated with renal disease differ in any essentials from ordinary rickets. The bone lesions of some at least of these cases respond to ordinary antirachitic treatment. The possibility of renal disease should therefore be especially borne in mind in every undersized child with severe rickets and in every case of rickets in a child over, say, 2½ years; and all young children with chronic renal disease should receive regular antirachitic treatment, probably both in winter and in summer.

HELEN M. M. MACKAY, M.D., M.R.C.P. Lond.,
Physician to the Queen's Hospital for Children.

The Services.

ROYAL NAVAL VOLUNTEER RESERVE.

THE King has approved of the award of the Royal Naval Volunteer Reserve Officers' Decoration to Surg. Comdr. T. B. Dixon.

ROYAL ARMY MEDICAL CORPS.

Maj. J. du P. Langrishe retires on retd. pay and is granted the rank of Lt.-Col.

Capt. P. R. O'R. Phillips to be Maj. (Prov.).

ARMY RESERVE OF OFFICERS.

Lt.-Col. B. A. Craig, having attained the age limit of liability to recall, ceases to belong to the Res. of Off.

MILITIA.

Maj. W. A. Lethem resigns his commn.

TERRITORIAL ARMY.

Lt. O. G. Misquith to be Capt.

Lt. D. R. McGregor is secd.

Lt. N. F. C. Burgess, from supern. for serv. with Univ. of Lond. Contgt., Sen. Div., O.T.C., to be Lt.

A. Bowie to be Lt.

ROYAL AIR FORCE.

Flight Lt. T. K. Place is promoted to the rank of Squadron Leader (Dental) on promotion to Major in the Army Dental Corps.

RESERVE OF AIR FORCE OFFICERS.

F. G. Mogg is granted a commission in Class DD as a Flying Officer.

INDIAN MEDICAL SERVICE.

Temp. Lt. Bhagwant Kishore Sikand to be Temp. Capt.

Special Articles.

CONFERENCE ON RHEUMATIC DISEASES.

BATH, MAY 10TH–11TH.

THE Conference on Rheumatic Diseases now being held in Bath was opened on Thursday, May 10th, by Sir GEORGE NEWMAN, the President, who said:—

In the sixteenth century the Englishman was called a "sweater" because of the four or five strange epidemics of *sweating sickness* which began about 1485 and continued intermittently until 1551 and which it was alleged had been introduced from abroad. In the eighteenth century we were described as "tipplers" because of our alcoholic habit of excessive spirit drinking, and as a "pock-marked" people because of the wide prevalence of *small-pox*. In the nineteenth century we became notorious as a people who were the victims of *rickets*, *gout*, and *tuberculosis*. Now we are chastised with *rheumatism*. In this dark record there is, however, a bright ray of light. Sweating sickness, as such, has vanished; excessive addiction to strong and raw spirits is a thing of the past; no one need now have small-pox unless he wishes to have it; it is known that severe rickets and gout can be readily prevented; and the mortality of tuberculosis of the lung is less than a quarter of what it was in 1847. In a word, we have in one way or another found the answer to these six scourges, each of which threatened to be formidable in its day. They have been conquered, or at least can be conquered if and when we so desire.

The Problem.

We are met to-day to consider the nature of the campaign which should be organised if we would similarly control rheumatism. There can be no doubt as to the urgency of the matter, which has been made manifest: (1) by the advance in our knowledge of the heterogeneous group of morbid joint conditions; and (2) by the data furnished to us for the first time by the school medical service and the health insurance system. We now know that acute rheumatism of children is sowing seeds of a growing harvest of disease of the heart and nervous system; and secondly, we now know that the chronic forms of rheumatism are very seriously crippling many hundreds of thousands of our people, who are not only thus subjected to suffering and disablement, but are losing heavily both in time and money. This disease is now recognised to be every year a drag on industry, an evil incubus on the worker, a source of oppressive financial loss to the State, and a protean cause of excessive mortality and ill-health. We are all here because we are deeply convinced that there is need for coördinated action for the thorough and continuous investigation of this malady in all its forms, and then for a well-devised and systematic attack upon it. Coöperation will take different, though converging, paths, for though the problem is one in issue, it is manifold in aspect.

The Chief Medical Difficulties.

Our main difficulties are three. First, we cannot yet exactly define the respective relation of the varied forms of rheumatism to each other, nor their distribution over the world generally or in our own country; secondly, we do not know with certainty the *causa causans* of this morbid group, though we are learning to circumscribe and differentiate their predisposing conditions; and thirdly, our varied medical experience is not yet in working accord as to the best means of treatment. No doubt some of the divergence of view as to treatment is due to the lack of what the engineers call "assembly of parts," and some to the fact that new methods of investigation and of physico-therapeutics are of recent invention or application. What is needed, in fact, is the assembly of all the parts, the unification and harmonising of all the experience available—experimental, clinical, and therapeutic. Hopeful advances are being made in all three directions but they await *integration*. For instance, in treatment, some swear by light and heat, others would be saved by water; some swear by massage and manipulation, others by rest; and some, rightly enough, do not swear at all, but proceed from case to case with tentative empiricism.

We must not forget that medicine has often enough won its way by empirical methods and the evidence of circumstance. The validity of vaccination as protective against small-pox was established by Jenner in 1798, though the infective cause of the disease was unknown and, what is rather strange and surprising, remains unknown to-day. Enteric fever was both controlled and successfully treated long before the bacillus was isolated by Eberth and Gaffky in 1884. Typhus fever was likewise conquered though its cause had not been elucidated. Koch discovered the bacillus of tuberculosis in 1882, but the disease was successfully treated and had begun to decline 40 years earlier. The history of the pathology and prophylaxis of these four diseases is deeply instructive, and I commend a consideration of it to all students of medical progress. There is perhaps a tendency at the present time for persons blessed with the faculty of curiosity but not with the virtue of circumspection to plunge into the study and treatment of disease with insufficient regard to the history of man's growing control of morbid processes, a control exercised primarily through a wider understanding of physiology and pathology.

Acute Rheumatism.

We now know that acute rheumatism begins as a disease of school age (5–14), though not a disease spread by the elementary school. It is at school age, therefore, that we must first both explore and prevent. We must explore the obscure signs of invasion; we must prevent the subsequent *polyarthritis*, *carditis*, and *chorea*. It is estimated that this infection is responsible for 80 per cent. of the deaths from heart disease under 20 years of age and 40 per cent. of the total cardiac mortality, itself the principal certified cause of death in England.

The cause of the disease is not yet fully proved, but the hypothesis which at present holds the field is that acute rheumatism is the reaction of the human body to the presence of the *Streptococcus viridans*. This organism is widely distributed, is frequently found as a harmless saprophyte, or as the causal agent in lesions which have nothing to do with rheumatic fever. If it be, as is believed, a common, perhaps a constant, habitant of the body, we must concentrate our attention on the conditions, circumstances, or predispositions, external or internal, which induce it to assume an activity which results in rheumatic fever. It would appear to be as futile to attempt to annihilate this streptococcus as it would be to exterminate the bacillus of tuberculosis. In our attack upon either of these diseases we must direct our main efforts to the fortification of the human body, to the exclusion from it of the invading micro-organism, or to the frustration of the activities of the micro-organism within the human body. This largely resolves itself into a question of those social conditions of the child which lead to rheumatic infection. Sometimes it may be coldness or chill in susceptible children, a damp house, or inadequate and unsustaining food, or unsuitable clothing, boots and shoes, or "feckless" mothering. To discover that a certain percentage of rheumatic children hail from "damp" houses—an elusive character of house property to measure—is not necessarily to discover a primary predisposition, for many other such cases come from dry houses, and after all a large majority of non-rheumatic children in any given district may also live in "damp" houses. Damp houses are no doubt undesirable, but living in damp houses does not, of itself, produce acute rheumatism. There are more damp houses in rural than in urban districts, yet the disease is ascertained proportionately to be more incidental in urban areas. It is the *total social, domestic, and physical upbringing of the child* which

seems to be the common denominator. For this is what affects the constitution of the child in the long run, which tends to make its tonsils and lymphoid tissue receptive rather than resistant, which gives us in a word a *susceptible* child, or which favours the development of infection within its body. Therefore, closer supervision by parents and teachers should be exercised over all children under the age of 14, in order to detect the earliest signs of rheumatic infection —"growing pains," nervousness and twitchings, repeated tonsillitis or chronic sore-throat, pallor and shortness of breath, and dental sepsis, which may be indicative of the liability to, or even the onset of, rheumatic fever. Such conditions call for early detection and prompt treatment. We have many agencies now available for this purpose—infant welfare centres, school medical service, hospitals, the medical practitioner, and so forth, but we do not use them sufficiently for this specific object, nor do we coördinate them as fully as we ought.

Speaking broadly, therefore, we must seek steadily to improve the personal and environmental hygiene of childhood, we must exercise a closer and more vigilant supervision of these susceptible children by the infant welfare and school medical services, and we must organise our methods of diagnosis and treatment of those found to be suffering from the disease. Definite steps of this nature have recently been taken in America and also in this country (particularly at Birmingham, Bristol, London, Glasgow, and elsewhere, with 400–500 available beds).

The Rheumatism of the Adult.

When we turn to the rheumatism of the adult we find further confirmation of the need for organised, intensive, and comprehensive investigation, not only in the laboratory, but at the bedside, and even in the factory and workshop. As in acute rheumatism, so here, we need research into the social and causative aspects; we need to pool our experience of therapeutic measures. It is the integration and coördination of the immense stores of experience now being acquired which is the principal desideratum at the present time. Every medical practitioner can help in this field of study. If the holding of this conference encourages the whole profession to cease to work in water-tight compartments in this disease it will do great good. The consultant and the specialist should be invaluable to the public medical services, as they in their turn should serve him. Nor is medical coöperation our only need. There are many contributory public agencies in the State, and the time has come for them also to combine against this common enemy. The maternity and infant welfare services, the school medical service, the poor-law, national health insurance, the hospitals, and the voluntary health societies could render much assistance by addressing themselves to the solution of this problem which, like tuberculosis, has a very wide, almost a universal, social province.

In spite of the darkness which surrounds chronic rheumatism there is some brief general counsel which may be given to all persons suffering from any degree or form of chronic rheumatism. First, they should promptly seek medical advice for the discovery and removal of possible sources of infection in their own bodies, which are acting as generating centres of auto-infection—such as infection of the tonsils, teeth, nasal sinuses, and intestinal tract. Wherever the source of such infection may be, it is absolutely of paramount importance that it should be dealt with promptly and thoroughly. No effort should be spared to check it at its very earliest stage. It has been well said that it is "perfectly futile to waste valuable time by palliative treatment, with anti-rheumatic or other drugs, local applications to the joints, and so forth, till the focus of infection has been eradicated." A stitch in time saves nine. Secondly, persons suffering from rheumatism should so order their lives as day by day to practise personal hygiene, and strict *moderation* and selection in food and drink, exercise, fresh air, and rest. Thirdly, they should be vigilant to avoid any predisposing conditions which conduce them to attacks of the disease, such as dampness and chill, unsuitable clothing, excessive use, misuse, or disuse of the stricken joints, or a clogged alimentary system. Neglect in the early stages of their condition is their supreme danger.

We have the exceptional advantage of the counsel of my distinguished colleagues, Lord Dawson of Penn, and the two Regius professors from Oxford and Cambridge, Sir Farquhar Buzzard and Sir Humphry Rolleston. We have also a brilliant group of recognised medical authorities, including those whom it is a pleasure to welcome to our shores. Further, it is particularly agreeable to confer with the physicians of this city, whose work and writings have contributed so largely to knowledge and practice. We cannot hope that our conference will furnish a complete answer to all our questionings and difficulties. But it should stimulate us in coöperation and endeavour, and it should guide us in the direction of a fuller and a more scientific study of what Milton and Dryden called the "bone-racking" disease. Whatever befall us in this enterprise we are fortunate in finding ourselves in the beautiful and ancient city of Bath, engaged, like the Romans and our own forefathers, in the rediscovery of its healing powers.

ROYAL COLLEGE OF PHYSICIANS OF LONDON:

THE HARVEY TERCENTENARY.

THE tercentenary celebration of the publication of the "De Motu Cordis" by William Harvey has been arranged for May 14th–18th, and the full programme will be found in THE LANCET of March 24th (p. 621).

Demonstrations at University College.

Fuller details are now available as to the demonstrations to be delivered at University College on Tuesday, May 15th, and Wednesday the 16th.

At 10.30 A.M., there will be an Exhibition of a Film of Harvey's Experiments, prepared by Sir Thomas Lewis and Dr. H. H. Dale.

At 11.30 A.M., the following demonstrations will be given:—

1. Prof. Lovatt Evans and Prof. E. B. Verney will give a demonstration of the Isolated Mammalian Heart-lung Preparation. The preparation to be shown is one devised by the late Prof. E. H. Starling for the purpose of studying the reactions of the mammalian heart to measurable changes in the conditions under which it is working. The heart and lungs are completely isolated from the rest of the animal, the normal peripheral circulation being replaced by a system of tubes representing its arterial, capillary, and venous components. The rate of inflow of blood into the right auricle, the temperature and composition of this blood as well as the peripheral resistance against which the left ventricle works can be varied and measured at will. Further, the effect of variations in any of these factors on the volume of the heart, on its rate of beating, and on the coronary flow may readily be studied.

The demonstration is designed primarily to show the nature of the reaction of the isolated heart to changes in the work which it is called upon to perform. These changes in work are here brought about by variations in the venous inflow or the peripheral resistance or in both. The effect of changes in the CO_2 tension in the gas ventilating the lungs, and of the addition of adrenalin to the circulating blood will also be shown.

2. Dr. H. H. Dale will demonstrate an apparatus for artificial circulation, designed by Dr. E. H. J. Schuster and himself, and consisting of two diaphragm-pumps, the throws of which are independently adjustable while the machine is in action. The two pumps are made to replace the two ventricles of the heart, so that the reactions of the blood-vessels of both major and minor circulations, and the resulting changes in resistance and in distribution of the blood in the system can be studied, free from the complications of compensatory or other changes in the action of the living heart. One pump carries out

the circulation through the lungs, the other through the whole, or any selected part of the systemic circulation. This system, with its artificial heart and natural resistances, is in some sense a counterpart of the heart-lung preparation.

3. Sir Arthur Keith will demonstrate: (*a*) models made in 1906 to illustrate the movements of the human heart and to explain the negative wave in the jugular pulse; (*b*) Sir James Mackenzie's original polygraph preserved in the Museum of the Royal College of Surgeons; and (*c*) will give a brief account of the anatomical examination of hearts observed and recorded by Sir James Mackenzie during his practice in Burnley.

4. Sir Thomas Lewis will demonstrate, with the help of Dr. Ronald Grant and Dr. K. E. Harris, some reactions of the human skin to stimulation, illustrating contraction of the minute vessels and their reactions to injury. This demonstration will be given on Wednesday only at 11.30 A.M.

5. Dr. B. W. S. Mackenzie will show some of Sir James Mackenzie's original apparatus.

There are still some tickets available for these demonstrations, and medical practitioners who desire to be present should apply for them at once to the Registrar, Royal College of Physicians of London, Pall Mall East, S.W. 1.

NOTES FROM INDIA.

(FROM OUR OWN CORRESPONDENT.)

Medical Research in India.

MEDICAL research and education are receiving much consideration in India at the present moment. A committee presided over by Sir Walter Fletcher, secretary to the Medical Research Council, has just dispersed after three strenuous months' work. The promotion of medical research is officially under the control and guidance of the Government of India. Much research work, however, is carried out in provincial institutions, and it was felt that the time had come when some definite scheme for the promotion of research should be formed, outlining work to be carried on by the Central Government and correlating the efforts now being made in existing provincial institutions such as the Calcutta School of Tropical Medicine. The report of the committee is confidential and may never be made public, but it is rumoured that the research department will be greatly strengthened and augmented and that a new special central research institute may be created. Sir Walter Fletcher's large experience was enlisted to help the Government of India and the Indian Research Fund Association to organise means whereby medical research will be fostered and encouraged, for at present the valuable material available is not being used to the best advantage.

Sanitation in Bengal.

It has usually been held that the main stream of the Ganges used to flow southwards past Calcutta in the Hooghly and that a sudden diversion eastwards some centuries ago carried away the Ganges flood water, bereft Central Bengal of its agricultural prosperity, and turned healthy tracts into what are now the most malarious districts in the plains of India. Sir William Willcocks, the irrigation expert who has been touring the delta of Bengal, in a lecture to the British India Association, combats this view; he holds that the main Ganges, by reason of its size, could never have been retained in the Hooghly and other channels, but that the present waterways in Western and Central Bengal are old canals made by "Bhagirath," the legendary chieftain who conducted the Ganges to the ocean in order to irrigate these tracts with Ganges flood water. The present stagnant condition of the waterways is due to centuries of neglect and the remedy lies in their cleaning and re-excavation. They could again be used as water channels if a barrage were made across the Ganges at a suitable place, and the surrounding districts now desolate and malarious would become prosperous and healthy. Whether or not any practical scheme can be devised on these lines will have to be considered. On other lines Bengal is striving to improve health conditions. The province is adopting the "thana," covering an extent of about 80 square miles as the sanitary unit area. Each area is to be provided with at least one sanitary officer, either a sanitary inspector or a doctor. This officer will deal with preventive measures in his unit guided by the superior health staff of the district, who may when necessary concentrate all his forces in one part of the district. It is hoped that better results will ensue from this rearrangement.

Maternity and Child Welfare.

The more social aspects of medicine are gradually developing in India, though but slowly. Centuries of the feudal and family outlook have restricted the charitable impulses of the Indian to his own family or class. The community as a whole is still slow to believe in movements of a general nature such as maternity and child welfare and the protection of child life. Nevertheless, the maternity and child welfare movement since its inception by Lady Chelmsford has progressed considerably and the series of health and welfare exhibits held throughout India during the past cold weather have inspired workers to continue their efforts. The Child Marriage Bill and the Remarriage of Hindu Widows Bill have been again before the Central Legislative Assembly and show that the desire of the educated classes to break through the barriers of traditions and customs which oppose progress are becoming more and more capable of formulation and public discussion. In the Bill presented to the legislature it is proposed to raise the marriageable age of girls to 14 and of boys to 18.

Scavenging and Sewerage.

The "sweeper" or scavenger is one of the most valuable persons in India—only one or two of the largest cities have sewerage systems and even in them a large portion is unprovided with water-closets. So valuable is the sweeper that he is usually known by the honorific title of "Maharaj." It recalls the telegram during the war by an anxious sanitary commissioner in Mesopotamia to headquarters: "Will exchange medical officers at the rate of two for one sweeper." Both Madras and Calcutta have lately suffered from sweepers' strikes, and the sanitary (or insanitary) consequences are appalling. The recommendation of the Royal Commission of 1840 that excreta should be removed as quickly as possible from human habitation and preferably by means of water carriage is still unfulfilled even in large cities.

Improvement in Longevity Rate.

An interesting sidelight is shown on the improvement of health conditions in India by the report of the actuary of the Government of India on Indian insurance companies. In the statistical study of rates of premiums and the duration of assurance membership he concludes that there has been a distinct improvement in the longevity of the Indian population during the last 30 years.

BERLIN.

(FROM OUR OWN CORRESPONDENT.)

Experiments on Children.

A PUBLIC sensation has been created here by a report of some experiments on the cure of rickets, published by Dr. Vollmer, of the Infants Hospital. In order to prove that a proprietary preparation of irradiated ergosterol was efficacious even under the most unfavourable general conditions, the investigators kept 20 infants in dark rooms and gave them a diet poor in vitamins but supplemented by this preparation. The report contained a somewhat unfortunate sentence in which Dr. Vollmer explained

that he had performed his experiments on 100 rats and 20 children. The result was that a medical member of the Reichstag, Dr. Moses, asked the Minister of the Interior whether he would take measures to stop experiments of this kind. He mentioned similar reports in the medical press of experiments on children suffering from tuberculosis and scarlet fever. The President of the Health Office replied for the Government that he was informed that the report meant that the children had not received a special antirachitic diet, nor any actinic rays whilst under observation, but apart from this they had been treated like other children. They had, moreover, been cured, and the supposition that they had been damaged by their stay in the hospital was therefore erroneous. Concerning the other facts mentioned by Dr. Moses, he had not yet made full investigation, but he was in a position to state that some of them did not even refer to Germany, but to foreign countries. The question has also been discussed in the Berlin Medical Chamber, and a committee has been elected to inquire whether Dr. Vollmer and his colleagues have contravened the rules of medical ethics.

Payment of Medical Deputies.

Medicine has but few representatives in the German Parliament, compared with the legal, the clerical, and other liberal professions; in the discussion of Bills which deeply affect its interests, it is represented quite inadequately. The reason is that the prolonged absence from home connected with membership of Parliament involves the loss of practice—a loss for which the salary of a deputy does not fully compensate. The Leipziger Verband has therefore decided to accumulate a Parliamentary fund by imposing an extra levy of M.20 (£1) on each member. The amount thus raised should be £40,000, which will be used to indemnify medical deputies for the loss of practice during their absence for Parliamentary work. No individual party is to be supported; the only condition is that deputies have to work for the profession —i.e., to vote against any Bill which may be prejudicial to its interest. A committee of four members of the Leipziger Verband will be entrusted to allot the money. The proposal has provoked a great deal of opposition and several local branches have protested, saying that the subscription to the Leipziger Verband is already too high, and that more cannot be contributed in the present sad condition of the profession. They also suggest that it is unconstitutional to bind Members of Parliament in their votes by giving them money on conditions.

Responsibilities of Pharmacists.

The provisions of the German law concerning the abuse of morphia and cocaine are somewhat severe. The Supreme Court at Leipzig recently gave judgment that a licensed chemist is liable to punishment if he dispenses a medical prescription although aware that the drug is destined not for medical purposes but for abuse. If he acts bona fide he is not held responsible, and the liability to punishment rests on the medical man who has prescribed the drug. This remarkable ruling requires that the chemist shall ascertain whether a prescription is made for curative purposes, in this way exercising a certain amount of supervision over the practice of individual medical men. The Chamber of Chemists, the official representative of the pharmaceutical profession, has energetically protested against the above judgment, declaring that the chemist cannot but execute every prescription signed by a duly qualified medical man and that an obligation to control the object of a prescription would be ultra vires. The Medical Chambers have not yet dealt with the matter although it has already been discussed in the medical press.

As diphtheria is spreading and is growing more malignant in Berlin, the municipal authorities have decided that children of from 1 to 6 years of age may be inoculated by the Schick method free of charge. There is, of course, no compulsion, but it is explained to the public that such inoculation may be expected to protect children against the disease for at least seven years.

Dr. Reyer lately read before the Berlin Society for Internal Medicine a paper on mediastinal pleurisy. He has seen 26 cases occurring as a sequel to influenza and sore-throat. The symptoms are severe attacks of cough and dyspnœa, with very few signs on auscultation. Percussion reveals a triangular patch of dullness in connexion with the normal heart dullness. Apart from this sign the diagnosis can be established by radiography. The prognosis is not a bad one.

IRELAND.

(FROM OUR OWN CORRESPONDENT.)

Retirement of Prof. J. A. Lindsay.

Prof. J. A. Lindsay, Emeritus Professor of Medicine in the Queen's University of Belfast, has decided to retire from active practice and to reside in London. At a farewell dinner on April 24th many of his medical friends took the opportunity of expressing their high appreciation of his public services to the hospitals and university, of their indebtedness to him as a clinical teacher, and of their affection for him as a colleague.

Mr. T. S. Kirk, chairman of the medical staff of the Royal Victoria Hospital, in proposing Prof. Lindsay's health, paid a graceful tribute to his long and valued connexion with the hospital, first as a physician, and later as a chairman of the board of management. He had given his time ungrudgingly to further every interest of the institution. Prof. C. G. Lowry, chairman of the staff of the Belfast Maternity Hospital, associated himself with Mr. Kirk in this toast, stating that there were many criteria by which success in life could be judged, but if Prof. Lindsay valued renown as a clinical teacher, and the gratitude, affection, and respect of the many generations of medical students whom he had taught, he might be deemed to have achieved success in no ordinary measure. Prof. Lowry also paid tribute to his other services to the school, especially referring to the establishment of the Dental Faculty, and to his strenuous activities for the amalgamation of the Royal Victoria Hospital and the New Maternity Hospital, activities now crowned with success.

In his reply, Prof. Lindsay said that teaching, especially clinical teaching, had always been a joy to him, and he was never happier than when surrounded at the bedside by a group of eager and intelligent students. The late Sir William Osler once said that he wished his epitaph to be "he taught students in the wards." He himself would desire no better epitaph. After a brief glance at the progress of medical science in recent years, he sketched the progress of the Belfast Medical School within his own time. The old Royal Hospital had had 200 beds with a staff of 11, only one theatre, and two special departments. The present Royal Victoria Hospital had 436 beds, a staff (including the auxiliary staff) of 53, 9 theatres, and 6 special departments. These figures gave the measure of the progress of the times. It was about to add a maternity department and a department for paying patients. He had many regrets on leaving Belfast, but he felt that after 44 years of practice he might fairly take off his harness. He intended for the present to retain his seat on the Senate of their University, and would watch the further progress of the School with which he had been so long associated, and for which he predicted a bright and successful future.

Later in the evening speeches stressing the varied nature of Prof. Lindsay's active life in Belfast were made by Dr. J. S. Morrow, Prof. W. St. Clair Symmers, Prof. R. J. Johnstone, Prof. T. Sinclair, Sir John Campbell, Prof. A. Fullerton, Prof. W. W. D. Thomson, Dr. J. C. Rankin, Dr. Gardner Robb, and Sir Thomas Houston.

McKisack Memorial Fund.

A meeting of the subscribers to the McKisack Fund for a memorial to the late Dr. H. L. McKisack will be held at 10.30 A.M. on May 17th in the Royal Victoria Hospital, Belfast, immediately before the clinical meeting of the Ulster Branch of the B.M.A., to decide what form the memorial should take. It is hoped that intending subscribers will send their subscriptions to Mr. Edwin Hill, Northern Bank, Belfast, or Mr. Stanley Ferguson, Ulster Bank, Belfast, before this date in order that the subscription list may be finally closed.

MEDICINE AND THE LAW.

Coroner and Medical Practitioner.

AT a Greenwich inquest held at the end of April the coroner severely criticised a medical practitioner for having been present without consent at a post-mortem examination upon a man who died while entering an omnibus. The practitioner was apparently acting as consultant to the London General Omnibus Company which was interested in view of the prospect of civil proceedings in which it might be held liable. The coroner is reported by the *Daily Express* to have told the representative of the omnibus company that, if the company did things like that, he would shut them out of the court entirely; he was willing to give them every facility but he could not have such things done without his permission; "it is an unusual thing to do and is only worthy of a second- or third-rate insurance company." "The doctor," the coroner is reported to have added, "ought to know that he had no right to be present without the consent of the coroner." The gravamen of this medical practitioner's offence was presumably that, being a prospective expert witness and adviser employed by one of the parties to a prospective civil action, he acted improperly in being present at a post-mortem examination at which the other side was not similarly represented. It was presumably not suggested that a practitioner thus present without consent would abuse the occasion by attempting to fabricate or tamper with evidence; but he secured an advantage for his own side over the other side in having access to information and in having facilities which the other side was (for want of means or opportunity) denied.

At some stage of the inquest the coroner appears also to have said "I will see that the doctor is never present in my court on any future occasion." This, if correctly reported, raises interesting issues. There is doubt how far the proceedings at an inquest are entirely open to the public to attend. Particular circumstances may justify a private hearing, and a person whose behaviour is disorderly may certainly be excluded. The public, however, would probably be surprised to find that a coroner's court was so proprietary an institution that particular persons could be permanently black-listed. The omnibus company would naturally not tender any witness who was known to be unacceptable to the court, and the court has means of securing its own expert witnesses if expert evidence is deemed necessary; nevertheless it would be an unusual judicial utterance to announce that under no circumstances would a particular witness be allowed to give evidence at any inquest. A coroner, of course, can conduct his proceedings unaided. He summons the witnesses and, unless he otherwise permits, he examines them. He is a law unto himself except that the rejection of evidence is one of the grounds on which the High Court will interfere to quash the inquisition. But the present arrangement whereby parties are usually allowed to be legally represented and to offer evidence is worth preserving. The relatives of the deceased, for example, may often desire to tender medical evidence on issues such as insanity. It would be unfortunate if the more anachronistic features of the coroner's inquest were emphasised by too sweeping an assertion of them.

Effect of Illness upon Promise to Marry.

In a breach of promise action tried before Mr. Justice Acton last week, the defendant admitted his promise to marry the plaintiff but pleaded that his refusal to carry it out was justified by the fact that she had contracted tuberculosis. The plaintiff said the defendant knew quite well what her state of health was; she said she was now entirely recovered, and she suggested that the reason for the defendant's conduct was not her own health but another woman's attractions. The judge told the jury that there was no legal reason why a man should not be bound to marry a deaf-mute or a cripple provided that he knew of her affliction at the time he made his promise and that she agreed notwithstanding her disability. On the other hand, the man might be excused if the woman became thus afflicted after the date of the promise being made and before the date for its performance by marriage. The burden of proof would be upon the defendant to show that, after he gave his promise, there did supervene such a condition of bodily infirmity as would justify him in refusing to marry the plaintiff. Evidently the defendant failed to discharge this burden in the case recently tried, for the jury found for the plaintiff with £35 damages.

The law, it will be observed, concerns itself with the contractual, not with the eugenic, aspect. In the eighteenth century Lord Mansfield held that if, after a man had made a contract of marriage, the woman's character turned out to be different from what he had reason to think it, he could refuse to marry her without being liable to an action. As Lord Kenyon presently observed, whether the infirmity were bodily or mental, the reason was the same—it would be most mischievous to compel parties to marry who could never live happily together. But the text-books point out that a man cannot count on getting out of his promise to marry by disparaging himself—though the attempt is not uncommon. Some 70 years ago a man pleaded in a breach of promise action that, since his promise to marry, his lungs had become seriously affected, so that he was totally unfit for marriage. The judges heartlessly took the view that perhaps the lady might like to be his widow, and thus his plea failed.

False Description as Bachelor of Science.

A prosecution in Shropshire last week illustrated the ease with which unqualified persons can assert the possession of academic degrees. A school-teacher, describing himself as a Bachelor of Science of London University, was appointed to a post at a provincial grammar school in January, 1921. He proved to be an excellent teacher of mathematics and his degree was never questioned until last October, when the headmaster had to fill in the qualifications and service of his staff in connexion with the pension scheme for the information of the Board of Education. He found the claim to the degree to be unfounded, and he suspended the teacher, whom the school governors subsequently allowed to resign. The teacher has now been charged with obtaining money by false pretences from the governors of the school by falsely describing himself as Bachelor of Science of London. The magistrates took a lenient view and bound the accused over, subject to his paying £25 as compensation and £30 costs. The bench remarked, in conclusion, that greater care should have been taken in making the appointment. This presumably means that, if a university graduate applies for a post, his degrees should be strictly verified from the university calendar.

THE DEVONSHIRE AMBULANCE SERVICE.—The annual report of the Devon County Centre of the St. John Ambulance Association states that during the past year many new ambulance and nursing divisions were formed. During that period the three Plymouth stations alone made over 25,000 attendances in the case of accidents and fires, and the conveyance of crippled children and hospital out-patients. These figures are an increase of 800 per cent. over those of 1921–22.

Public Health Services.

A MEDICAL BENEFIT INQUIRY.

REMOVAL OF NAME FROM MEDICAL LIST: A QUESTION OF COSTS.

UPON a recent inquiry under Part VI. of the National Health Insurance Medical Benefit Regulations, the Minister of Health, after deciding to remove a doctor's name from the medical lists of the insurance committees concerned, made no direction as to costs. In this respect he followed the recommendation of the tribunal which, though of opinion that the complainant insurance committee was justified in preferring its representation against the medical practitioner, commented upon the fact that certain charges had not been substantiated. No proof had been adduced of three of the original charges, a fourth was not proved in substance, a fifth broke down for want of evidence, and a sixth was so extensively amended at the hearing as to amount to an entirely new charge. The tribunal found it impossible to ascertain how far the respondent practitioner had been put to expense in preparing to meet these particular allegations. The report upon the case expressly emphasises the desirability that representations under Part VI. should not be made to the Minister in such a form that at the hearing, apart from failure of substantiation upon actual evidence submitted, it becomes necessary to abandon charges without seeking to prove them. From this criticism the tribunal expressly excludes a case where failure of proof results from some unavoidable cause such as the death or other disability of proposed witnesses. The Minister's adoption of the tribunal's recommendation will be generally approved, but it would seem that, if the expense of preparing to rebut unproved charges could be ascertained, the doctor would be entitled to his costs in respect of those items in any event, whatever the general result of the investigation.

These cases turn upon their own special facts and are seldom of general interest. One charge in the recent inquiry may perhaps be mentioned. It was said that the respondent doctor, not being registered as a dental surgeon or being on the dental panel for insured persons, held himself out as a dental surgeon and acted as such to insured persons, and, when so acting, gave a full anæsthetic and charged both fees as if a doctor was also present, though in fact the respondent's wife was the only other person present. It appeared that the respondent, while previously employed as assistant medical officer of a certain Amalgamated Friendly Societies' Medical Association, had been allowed to do dental work. At the time of the dental operations mentioned in the charge, dental benefit had been recognised as an additional health insurance benefit by the approved societies of which the particular patients were members. He filled in dental letters with particulars of treatment, including a guinea for anæsthetist's fee, and he stamped his name and address on the letter with the description "dental surgeon." His defence was that, being a qualified medical practitioner, he could rightfully describe himself to insured persons as a dental surgeon; he further said he had never been informed that the effect of schemes for additional dental benefit would be to change the nature of his dental practice and to put him under restriction—e.g., as to charging for an anæsthetic in the absence of an assistant anæsthetist. The tribunal felt unable to accept the explanation of his alleged ignorance since the dental letters were clearly applicable only in the case of registered dentists. While no specific complaint of the actual treatment was received, the tribunal thought that both the patients and the societies were in fact deceived as to his right to receive reward for his services; the report regards his conduct in this matter as open to criticism and censure.

ULTRA-VIOLET LIGHT TREATMENT AT PUBLIC BATHS.

In connexion with the proposal of the Manchester Corporation Baths Committee to instal apparatus for treatment by ultra-violet light at a cost of £400 at the Whitworth and Victoria baths, deputations from the committee visited Leeds, Bradford, and Stockport where such apparatus is installed in the public baths. They were informed that the innovation has proved a great success, the returns of attendances and the income from this source being as follows:—Leeds, from August, 1927, to February, 1928: total, 20,595, £1716 9*s.*; Bradford, from April 25th, 1927, to March 17th, 1928: total, 35,151, £2205 9*s.* 3*d.*; Stockport, from Feb. 15th, 1928, to March 24th, 1928: total, 1503, £196 9*s.* 6*d.* There was no medical supervision whilst the treatment was given; permission from the Ministry of Health for the installation of the various appliances had not been asked. The medical officers of health of the three towns visited had raised no objections, and no complaint had been received of ill-effects from the administration of the treatment.

The medical officer of health for Manchester, commenting on the visit, saw no reason to alter the views expressed by him two months ago, and quoted in THE LANCET of Feb. 25th last (p. 418). He does not approve of treatment by ultra-violet light in the absence of medical supervision either of the people treated or of the clinic itself; he has evidence that specialists in Manchester are constantly dealing with people who have suffered from undue exposure to ultra-violet rays, and serious conditions have been set up in these individuals as a result of unskilled treatment by this means. The only type of scheme which he can formally and personally approve is one which provides for the medical examination of all persons who are to be treated and the medical supervision of such persons at periods to be determined during the course of their treatment. The medical man or woman appointed for this purpose would possess knowledge and experience in the use of ultra-violet rays. No person should be admitted to the clinic unless passed by the doctor, and only such treatment should be given to any person as has been specially prescribed for him. In view of the strong opinion expressed by the medical officer of health, the finance committee has recommended that the scheme proposed by the Baths Committee, which does not conform to these conditions, be not approved.

INFECTIOUS DISEASE IN ENGLAND AND WALES DURING THE WEEK ENDED APRIL 28TH, 1928.

Notifications.—The following cases of infectious disease were notified during the week:—Small-pox, 376 (last week 326); scarlet fever, 1675; diphtheria, 1055; enteric fever, 65; pneumonia, 1122; puerperal fever, 51; puerperal pyrexia, 115; cerebro-spinal fever, 9; acute poliomyelitis, 10; acute polio-encephalitis, 4; encephalitis lethargica, 37; continued fever, 2; dysentery, 24; ophthalmia neonatorum 123. No case of cholera, plague, or typhus fever was notified during the week.

Cases of small-pox were notified from the following 21 counties: London, 3; Chester, 2; Derby, 10; Durham, 92; Essex, 1; Gloucester, 1; Lancaster, 44; Leicester, 1; Lincoln, Parts of Kesteven, 4, Parts of Lindsey, 5; Norfolk, 4; Northumberland, 12; Nottingham, 15; Soke of Peterborough, 7; Stafford, 5; Surrey, 4; Warwick, 5; Yorks, North Riding 8, West Riding 101; Glamorgan, 18; Monmouth, 34.

The number of patients in the Infectious Hospitals of the Metropolitan Asylums Board on May 1st–2nd was as follows: Small-pox, 21 under treatment, 8 under observation; scarlet fever, 1588; diphtheria, 2200; enteric fever, 34; measles, 1379; whooping-cough, 150; puerperal fever, 18 (plus 13 babies); encephalitis lethargica, 67; "other diseases," 21. At St. Margaret's Hospital there were 13 cases of marasmus, and 11 babies (plus 6 mothers) with ophthalmia neonatorum.

Deaths.—In the aggregate of great towns, including London, there were 2 (0) deaths from small-pox, 1 (0) from enteric fever, 117 (75) from measles, 5 (1)

from scarlet fever, 50 (13) from whooping-cough, 21 (12) from diphtheria, 39 (6) from diphtheria and enteritis under two years, and 80 (10) from influenza. The figures in parentheses are those for London itself.

The two deaths provisionally classified to small-pox were assigned to Gateshead. The fatal case of enteric fever outside London occurred at Norwich. Of the 42 fatal cases of measles outside London, 4 were reported from Tottenham and 3 each from Liverpool and Salford; while the figures in Edinburgh, Glasgow, and Dublin for the same week were 7, 3, and 3. Of the 37 fatal cases of whooping-cough outside London, 7 were reported from Liverpool, 4 from Cardiff, and 3 each from Birmingham and Bradford.

The number of stillbirths registered during the week was 292 in the great towns, including 60 in London.

Correspondence.

"Audi alteram partem."

THE AUSCULTATORY GAP.

To the Editor of THE LANCET.

SIR,—Your annotation (p. 919) prompts me to draw attention to a potential source of error in blood pressure records to which I can find no reference in standard literature. It is quite essential that the pressure in the cuff should be released slowly and with certain types of release valve this is a matter of some difficulty. Even with the best type of valve some inadvertence or distraction during the taking of a record may result in a sudden drop of 20 mm. in pressure in the cuff. That sudden fall, though it may not bring the pressure down to the systolic level, results in a sound heard by the stethoscope below the cuff. It is an isolated sound, and though the external pressure be maintained at the level to which it has thus fallen the sound is not repeated.

I have detected this sound often enough to make me curious as to its explanation. It is heard, under the circumstances noted, before but not long before the systolic pressure level has been reached and it is similar in quality to the first sounds heard thereafter. It occurs in the absence of extrasystole or of alternation of the pulse, and a sudden or at least rapid fall in the external pressure appears to be the chief factor in its production. An external pressure sufficient to obliterate the pulse wave in an artery does not necessarily inhibit all power of vibratory response in the vessel wall and I can only think that this sound is an expression of recoil. I am too little of a physicist to be clear in the matter.

I am, Sir, yours faithfully,

Dundee, May 4th, 1928. JAMES M. STALKER, M.B.

To the Editor of THE LANCET.

SIR,—The suggestion in your very interesting annotation that the "rapid" vibrations in the arterial wall are responsible for any sound is, I venture to think, open to doubt, because unless those vibrations are as many as 60 to 100 per second they are not likely to produce any sound at all, much less the sound associated with the estimation of the blood pressure. The suggestion that eddies also play a part is open to equally strong objection, first of all because there is no evidence whatever of such an eddy, and secondly because no moving fluid, unless its surface be exposed to air, can produce any sort of a sound.

I am, Sir, yours faithfully,

Swansea, May 7th, 1928. G. ARBOUR STEPHENS.

To the Editor of THE LANCET.

SIR,—May I draw attention to the theory suggested by J. Barbier, in his monograph on "La Méthode Auscultatoire," to explain the mechanism of this phenomenon. Barbier regards the gap as the acoustic equivalent of the anacrotic pulse and explains its occurrence by reference to the typical tracing of such a pulse. He points out that in the ascending limb of such a pulse curve there are three successive zones. Of these the first and third appear as more or less vertical lines, while the second or middle zone, which represents the anacrotic notch, appears as a horizontal line or plateau. If the armlet of a sphygmomanometer be applied and the pressure be raised to a point below the systolic level, the subjacent artery remains collapsed except when forced intermittently to open by the succession of pulse waves. When the armlet pressure is equivalent to a point either in the first or in the second zone of the pulse curve, the arterial door opens with a jerk, in response to a rapidly rising pressure, a percussing quality is imparted to the movement of the arterial wall and a sound is produced. On the other hand, when the armlet pressure is equivalent to a point in the second zone, the region of the anacrotic plateau, the arterial door is forced by a very slowly rising pressure and, therefore, it opens without clatter and no arterial sound is produced.

This explanation is so reasonable that we might accept it at any rate until a better one is forthcoming.

I am, Sir, yours faithfully,

Torquay, May 6th, 1928. PAUL C. GIBSON.

"THE GRATEFUL REPUBLIC."

To the Editor of THE LANCET.

SIR,—May I recall attention to the subject of invaliding from the Navy for tuberculosis, broached by an anonymous correspondent in your issue of April 14th? This subject was much discussed in the House of Commons in March last, when no one seemed sure how much tuberculosis there was in the Navy, and whether more or less than in the other Services or in civil life. The facts are uncertain, as the age distributions are unknown, but it may be well to state that in the last four years for which we have full figures, 1922–25, there averaged, from tuberculosis, per 1000, in the Navy (92,000 men), 2·0 invalids, and 0·3 deaths; in the Army (196,000 men), 1·2 invalids and 0·18 deaths; in the Air Force (30,000 men), 1·6 invalids and 0·14 deaths. Of the men in the Navy, 85 per cent.[1] are under 35, so it will be worth while to mention that in these same years, 1922–25, there averaged in England and Wales 6,000,000 male civilians, aged 15–35, of whom 1·15 per 1000 died of respiratory tuberculosis; and the total tuberculosis death-rate was 1·32. The annual loss or wastage from tuberculosis comes out, for the Army at 1·4, for the Navy at 2·3, for the Air Force at 1·7 per 1000. The simultaneous civil death-rate was 1·32. The average annual loss of men from tubercle in the three Services together in the four years was 476 invalided and 68 dead, 544 in all. Médecin-en-chef (Surgeon-Captain) Cazamian[2] tells us that there are fewer cases of tuberculosis in the British than in the French or the United States navies: Rho[3] says that from 1893–1920, only once, in 1906, had the Italian Navy fewer cases than the Army.

But what chiefly exercised the House of Commons was the question, what became of the 220 the Navy invalided in 1925 and how many of them got pensions, and how many should. It appeared that only 3 per cent. were pensioned in 1923–24–25, but more recently 10 per cent. Men only get pensions if their disease is "attributable to the Service," the decision being made "by the medical officers at the Board of Admiralty," said the Financial Secretary,[4] though he allowed, later, that it might be fair to say that the rules by which these matters were judged were too severe, and that the doctors were not given sufficient latitude. And that seems not unlikely,

[1] Journal of the Royal Naval Medical Service, January, 1927, p. 26.
[2] Arch. de Médicine Militaires, 1927, lxxxxvii., 570.
[3] Military Surgeon, July, 1925, p. 1.
[4] Hansard, March 7th, 1928, col. 1177.

for the First Lord wrote [5]: "Before a disease can be accepted as attributable to the Service it must be shown to have developed out of unusual conditions." But phosphorus necrosis of the jaw surely developed out of what were thought to be usual conditions; was it not then attributable to yellow phosphorus match-making? But that will fail to be considered by the Joint Committee sitting now and examining the question of attributability, and one hopes the, also recently announced, special Medical Consultative Board on hygienic conditions may lessen the number of cases.

When I was a junior officer we often heard, "They do these things better in France," not so often perhaps now, yet it may be well to inquire what they do there. In the *Archives de Médecine Militaires* (the French *R.A.M.C. Journal*) for 1924, lxxx., 290, is a paper on disability pensions by Médecin Major R. L. J. Boyé, who declares that before the war the French citizen discharged his military service mostly at his own risk, but that now that risk is carried for him by the public, by the Law of March 31st, 1919. Its Article 1 begins: "The Republic, grateful to those who have secured the safety of the fatherland, proclaims and determines they have a right to pension," after August 2nd, 1914. Article 3 states that rights to pension arise from injuries certified before the man returns to his home, or from diseases caused or aggravated by the toils, dangers, or accidents of service. Article 5: all diseases in a soldier or sailor, either during service or during the six months following his discharge, are presumed, unless there be proof to the contrary, to have been contracted in or aggravated by the toils, dangers, or accidents of the service. The amending law of 1923 lays down that the "presumption" above comes into force the day the recruit is passed "fit for service" (after a detailed examination as searching and documented as for life insurance). Up to that time, if invalided, he is only pensioned under the old law, his disease must be proved due to the Service. Dr. Boyé suggests that a man, getting scarlet fever after arrival, and having to be invalided with chronic nephritis, would probably be pensioned under the old law.

"The Republic, grateful to those who have secured the safety of the Fatherland . . ." is a fine gesture, too, to the men; has England had less cause for gratitude than France, will she have less in future to the men who are not conscripted, but volunteer to serve for her protection?

If the Admiralty does not support these consumptive invalids, I suppose the guardians must. So, in any case, the public has to pay. But the period of transfer, the interim of uncertain rearrangement, is very hard on a consumptive patient who has to learn the completely new hierarchy that will by and by take him over when he has become known to them. Why should his old masters, if grateful, let their responsibility for him devolve on others? Feeling themselves the expense tuberculosis entails, they might the more busily search to end it.

I am, Sir, yours faithfully,

W. E. HOME,
Fleet Surgeon.

Naval and Military Club, W., May 1st.

[5] Hansard loc. cit., col. 1174.

SUBCUTANEOUS EMPHYSEMA DURING PARTURITION.

To the Editor of THE LANCET.

SIR,—I was interested to see in your issue of April 14th (p. 757) the report by Dr. Salmond of a case of surgical emphysema during parturition. I never saw or heard of such a complication during six months' clinical clerking at the Rotunda Hospital, but I had a similar case about six years ago in Valparaiso, which I did not report. It was the first confinement of a frail woman, the first stage of labour was prolonged, the membranes having ruptured early. During the expulsive stage the head came down to the perineum, the pains being strong and prolonged with short intervals. After the second stage had lasted two hours I applied forceps as the patient was beginning to show signs of exhaustion.

On my first visit next day she was very well, but remarked: "Doctor, I am all swollen with a curious tender feeling in the skin." There was typical emphysema reaching from the nipples under the breasts upwards over the clavicles to the neck, mastoid region, over the mandible and lower half of the face, upper shoulders and neck at the back, with no pain, but some tenderness on pressure. No treatment was given. The condition lasted about a week, and the puerperium was otherwise normal.

I do not think that the condition can be explained satisfactorily merely on the assumption of the rupture of one or more air-vesicles into the mediastinum or the subcutaneous tissues, because if that were so, once the rupture is produced, all the air forced out during each successive effort at short intervals and under very great pressure would soon cause some kind of distress or show itself as a localised swelling at some spot before giving rise to the typical sensation of surgical emphysema.

There must be some other explanation of a complication which leaves no after-effects. I have attended this same patient in three subsequent confinements without forceps, the last one a breech presentation, without recurrence of the complication.

I am, Sir, yours faithfully,

S. M. WELLS.

Queensborough-terrace, Hyde Park, W., April 23rd, 1928.

ANATOMICAL NOMENCLATURE.

To the Editor of THE LANCET.

SIR,—The Basle Nomina Anatomica (B.N.A.), containing some 4500 names, was promulgated, chiefly by the German and Austrians in 1895. After 33 years the Anatomical Society of Great Britain and Ireland, taking exception to 56 of these terms, has, with a view to their discussion at a meeting, just issued them to its members in a list in three columns, of which the first is headed "B.N.A. term," the second "Suggested Substitute or Translation into English," and the third "Reasons." Has the B.N.A., then, as a whole been accepted in England by anatomists and is it being used in medicine and surgery and their allied sciences? has all thought been abandoned of a truly international nomenclature? or even of an English nomenclature leading on towards an international? And what about France? For each nation to retain its own nomenclature or to adopt substitutes, even if only for those terms which it dislikes, is everlasting Babel.

The present moment is critical. Instead of pursuing our own bêtes-noires and crushing them out of existence let us find principles—not such that they all may determine the nature of each structure, which is impossible, but such that one or more will give every structure a name so reasonable and so convenient as ultimately to win unanimous approval even where that involves compromise. In a crowded afternoon to discuss for a few minutes 56 terms out of 4500 is to tickle Niagara with a straw. So serious and so subtle are the pitfalls that even the list just issued proposes for one correct and convenient B.N.A. term a substitute no more convenient and anatomically inaccurate. General principles readily solve the difficulty, and provide a term as accurate as the B.N.A., more convenient than either, and comprising both.

Would it be possible, then, for the Anatomical Society to meet eminent medical and surgical practitioners, specialists and otherwise, not to discuss particular terms, but to seek means of securing principles on which to base such a nomenclature as would appeal to all English-speaking teachers, students, and practitioners, and also mutatis mutandis to all teachers, students, and practitioners speaking other tongues?—I am, Sir, yours faithfully,

WM. CUTHBERT MORTON,
Hon. Demonstrator in Anatomy,
Leeds University.

May 7th, 1928.

LIVER IN PERNICIOUS ANÆMIA.

To the Editor of THE LANCET.

SIR,—As the disease appears to haye belied the dreadful title its name ceases to be descriptive, and if only for this reason, we should revert to its former designation—Addison's anæmia.

Dr. Knyvett Gordon's conception of the disease (THE LANCET, May 5th)—"the persistence of embryonic *erythropoiesis* in the liver"—cannot possibly be upheld. For some unknown reason attention has been focused almost entirely on the hæmoglobiniferous cells and their precursors; but dramatic as the changes in these cells and the appearance of the megaloblast are, equally striking features are present in the other descendants of the hæmocytoblast. The abnormal myelocytes and eosinophils in the blood stream, the polymorphs of normal size with hypersegmented nuclei so often encountered in films and in marrow puncture, the right-handed polynuclear count, the frequent presence of macropolycytes of Type I., and in the terminal stages, of the megakaryocyte type, show that the granulocyte series is also profoundly affected. Many of the cells in Addison's anæmia have no prototype in the human, mammalian, or avian embryo. And why limit the pathological process to the liver when the mesenchyme descendants in other parts are abnormal?

A view that has some confirmation, both experimentally and clinically, may be briefly mentioned. The hæmocytoblast is abnormal from birth, but performs its functions sufficiently well for the maintenance of health until abiotrophy occurs. Chemically abnormal erythrocytes are then formed, and these are readily phagocyted by the cells of the reticulo-endothelial system in the spleen, liver, hæmo-lymph glands, and in the marrow itself. The alteration in the environment of the hæmocytoblast produced by this intracellular hæmolysis still further embarrasses the failing parent and mesenchyme descendants situated in places other than the marrow attempt to revert to their embryonic function. On account of the altered environment true metaplasia cannot take place and the result is an abnormal reversion. This state continues until either the reticulo-endothelial system becomes refractory and phagocytosis ceases, or dietetic alteration restores some essential constituent to the plasma. A remission occurs, followed by a relapse when the environmental state of the abnormal hæmocytoblast again becomes unfavourable.

This view includes both the congenital and the biochemical hypotheses, so interlinked as to be inseparable, and however tempted we are to ascribe the disease to the one or the other, both factors, in the present state of our knowledge, must be considered together. The abnormal hæmocytoblast cannot be separated from its environment, nor can we say that the cell itself is not solely responsible for that environment. I am, Sir, yours faithfully,

Wigan, May 5th, 1928. W. E. COOKE.

THE MEINICKE REACTION.

To the Editor of THE LANCET.

SIR,—This micro-reaction for determining the syphilitic or non-syphilitic character of serum was dealt with by Dr. David Prentice, in your issue of March 10th (p. 493), who gave a full account of the details of the method as well as evidence of its great utility. The inference to be drawn from his account is that he, like Kovács, whom he quotes, would be satisfied with the reaction as an exclusive routine test except in certain instances for which the Bordet-Wassermann method cannot as yet be discarded. Further evidence to this effect is available from the work of Jaubert and Gory,[1] who examined 610 samples of syphilitic serum and 1490 samples of serum from other patients in the Hôpital Broussais, using a tolu antigen prepared by the method of Mutermilch of the Pasteur Institute. The sensibility of this antigen is as great as that of the German product. It was impossible to establish a comparison between the sensibilities of the Bauer-Hecht reaction and that of Meinicke for the different forms and manifestations of syphilis. The B.H. reaction was tested, with precise determinations of the hæmolytic index, in 2100 samples. The greatest importance is attached to the technique of preparing the emulsion, which is much the same as that given by Dr. Prentice, but heat (*à chaud*) is recommended. The stability of the emulsion of tolu antigen is shown by its remaining clear for more than a year. In 91 per cent. of all cases the Meinicke reaction permitted definite classification of the serum as positive or negative. Dr. Prentice found agreement between the Meinicke and Wassermann reactions in 93·3 per cent. of cases. The authors consider the reaction to be of great value in the battle with syphilis, and it is so simple that it may be employed by everybody and everywhere. Practitioners are advised to exact its use in laboratories to which they look for diagnosis, or at least to insist on the simultaneous use of different methods.

I am, Sir, yours faithfully,

University College, Cork, May 3rd, 1928. D. T. BARRY.

[1] Compt. Rend. Soc. de Biol., 1928, xcvii., 1455–6; Physiological Abstracts, 1928, xiii., 62.

HAS THE CAMPAIGN AGAINST VENEREAL DISEASE BEEN A FAILURE?

To the Editor of THE LANCET.

SIR,—All will agree with Mr. Johnston Abraham that more beds are needed for the treatment of gonorrhœal cases in women, especially those who work in an out-patient clinic. Our experience in the female V.D. department of the Royal Free Hospital confirms the opinions of Dr. Cumberbatch and Dr. Robinson, that the treatment of chronic gonorrhœa in women by cervical or urethral diathermy is, in many cases, the method of choice, but we differ from them as to the speed with which these cases can be rendered non-infectious. We find that cases which yield satisfactory results after only three to six diathermy applications include only (1) non-gonococcal cases of chronic urethritis and cervicitis, and (2) cases which, though at one time positive, have been subjected to a course of treatment other than diathermy and no longer show bacteriological signs of infection. We can quote six cases of gonococcal urethritis from our numbers, five of which showed pus and gonococci in the films after 4, 6, 7, 9, and 15 applications of diathermy respectively, while the remaining case showed pus in the urethral films after 24 applications. Several cases appeared to be free from infection at the end of six applications but, in the course of a few weeks, pus was again found in the films. These cases were nearly all either single girls or married women living apart from their husbands, where presumably there was no reinfection.

In our opinion diathermy applications are certainly the most adequate means of bringing a chronic gonococcal infection to an end, but the time taken up by a course of such tedious length makes it impracticable on a large scale in an out-patient clinic.

I am, Sir, yours faithfully,

ELIZABETH GOURLAY,
Assistant to the Medical Officer in Charge, Female V.D. Department, Royal Free Hospital.

May 8th, 1928.

To the Editor of THE LANCET.

SIR,—Dr. Tytler Burke's letter calls for a reply. He is right in inferring that I suggest the operation of vasotomy should be done in all cases of acute, chronic, anterior and posterior gonorrhœa. I have so far found no difficulty in doing so in these cases. As the rationale of this treatment is based on the attempt to disinfect the tract from beyond the limit of extension

of infection it is obvious that it should be applied in every instance. In a case of acute gonococcal anterior urethritis my practice is to inject one vas at once, and if the discharge has not disappeared at the end of a week to inject the other vas. I can strongly recommend this treatment to Dr. Burke and will be very interested to hear of his experience which will be valuable. With regard to detention in bed my remark did not apply to cases where constitutional symptoms necessitate rest in bed. But in the absence of these I find no objection to allowing the patient up after 24 hours with a collodion dressing.

I am, Sir, yours faithfully,

Harley-street, W., May 4th, 1928. J. F. PEART.

To the Editor of THE LANCET.

SIR,—Dr. Peart's claim that "injection of the vas" has in his hands been "absolutely reliable in dealing with every stage" of gonorrhœa astonished me, in view of my impression that such treatment had been largely given up, even for chronic vesiculitis; as wide investigation during the last five years had shown that it was neither free from risk of damage to the vas nor was very reliable as a cure, although of undoubted value in some cases. It is difficult to understand the raison d'être of treatment of any other gonococcal condition than vesiculitis by way of the vas, and, personally, I should consider vasotomy and injection of vesicles as unjustifiable and contra-indicated in the absence of symptoms suggesting gonococcal infection of the vesicle.

It appears to be unreasonable to claim that urethral folliculitis, probably the commonest complication of gonococcal urethritis, can be influenced in any way by injection of the vas with any antiseptic. It would be interesting to know the number and nature of the cases on which Dr. Peart founds his dogmatic statement in favour of treatment per vasa rather than per urethram in "every stage of the disease." I venture to suggest that intravenous injection of sulfarsenol as recommended by Dr. Carminow Doble, and diathermy of the prostate per rectum as introduced by Dr. Cumberbatch, are more likely to be of value in the treatment of epididymitis and prostatitis, in additional to the usual routine treatments of these conditions, than any treatment per vasa.

I am, Sir, yours faithfully,

H. WANSEY BAYLY.

Harley-street, W., May 7th, 1928.

MULTIPLE DENTAL EXTRACTIONS.

To the Editor of THE LANCET.

SIR,—It is not easy to decide between the "all at once" and "a few at a time" arguments of Dr. Hilliard and Mr. Johnson. In nine cases out of ten the patient's mouth will probably make a good recovery whichever method is adopted. In the tenth case, where there has been systemic infection from the sockets and the resistance is dangerously low, it is not obvious that multiple extractions will have worse results than the extraction of three or four teeth, three or four times repeated. On the whole, my impression is that the latter procedure has been less well borne. But has not the time come to abandon these haphazard and speculative methods? We are now able to have the blood tested, and if the non-specific bactericidal power is found to be dangerously low, it is possible to increase it substantially by ultra-violet body-baths or by really effective irradiation, producing erythema, in the mouth itself—the former method being, in my judgment, preferable from every point of view. This may, or may not, involve the postponement of the operation for as much as a week, but it is certainly calculated to promote rapid and painless healing and to prevent residual sepsis—a frequent and formidable sequel.

I am, Sir, yours faithfully,

London, W., May 8th, 1928. F. TALBOT.

DOCTORS AND THE NURSING HOMES REGISTRATION ACT, 1927.

To the Editor of THE LANCET.

SIR,—It has taken a quarter of a century to effect the legal registration of nursing homes, but those who first advocated this legislation—yourself among others—never anticipated the inclusion of doctors' houses and still less the exclusion of Christian Science homes. It may be of interest to recall that the first public discussion on the subject took place at the congress of the Royal Sanitary Institute at Bradford in 1903, and was quickly followed by a leading article and correspondence in your columns.

I am, Sir, yours faithfully,

E. M. HOMERSHAM,

Devonshire House, King Henry's-road, N.W., May 5th, 1928. Assoc. R.S.I.

MEDICAL AUTOGRAPHS.

To the Editor of THE LANCET.

SIR,—I am endeavouring to compile a list of medical societies or institutions that possess a collection of medical autographs, my purpose being to encourage this method of perpetuating the memory of those pioneers of medicine who have for the most part passed beyond the veil, but whose names live as the benefactors of mankind. The extensive collections that are possessed by the Royal College of Physicians of London, the Royal College of Surgeons of England, the Royal Society of Medicine, and that more recently acquired by the British Medical Association are familiar to me, but there must be many other professional societies both at home and abroad that have recognised the historical interest of such literary memorials, especially when associated with an album of portraits. I shall be grateful if such societies will furnish me with some particulars of any collections they possess.—I am, Sir, yours faithfully,

JAMIESON B. HURRY.

"Hinton Firs," 15, Gervis-road, Bournemouth.

VISIT OF DR. SCHWEITZER TO ENGLAND.—Dr. Albert Schweitzer, who is on furlough from his hospital work at Lambarene in Central Africa, will be giving a series of organ recitals and lectures during the month he is spending in England. On Wednesday, May 16th, at 7.30, he will give a lantern lecture on his work, at Friends House, Euston-road, London.

DONATIONS AND BEQUESTS.—The late Mr. William Fletcher Moore Patten, of Hove, left, in addition to other bequests, £2000 to the Sussex County Hospital and £1000 to the Royal Alexandra Hospital for Children, as well as £200 each to the Victoria Jubilee Annuity Fund and the Molyneux Asylum for the Female Blind, Dublin. On the death of his aunt £2000 will go to the Alton Children's Hospital and College and £1000 to Reedham Orphanage.—By the will of Miss Emma Tedbury, of Exeter, the following bequests have been made: £300 to the Cottage Hospital, Budleigh Salterton; £100 each to the West of England Eye Infirmary, the West of England Blind Institution, the Royal West of England Deaf and Dumb Institution; and the residue of the property to the Royal Devon and Exeter Hospital.—After the fulfilment of certain bequests Mr. William Thomas Higginbottom, of Blackburn Park, Didsbury, left £1000 each to Manchester Royal Infirmary, Dr. Barnardo's Homes, Ancoats Hospital, and Ardwick and Ancoats Dispensary, and £500 to the Christie (Cancer) Hospital, Manchester.—Among other large bequests the late Alderman F. C. Clayton, of Edgbaston, left £3000 to Queen's Hospital, Birmingham, with the request that this sum should be used for a Queen's Hospital Convalescent Fund, for the benefit of in-patients of that hospital by the purchase of tickets for their admission to the Sanatorium at Blackwell, or otherwise in procuring for them change of air and rest; £1000 to the Queen's Hospital, Birmingham, for general purposes; and some £353 per annum from ground rents to the University of Birmingham. Under the same will the University of Leeds will receive £2000 in stocks to found a Richard Reynolds scholarship in chemistry or pharmacy.

Parliamentary Intelligence.

NOTES ON CURRENT TOPICS.

NATIONAL HEALTH INSURANCE BILL.

Payment of Insured Persons While in Hospital.

WHEN the Committee resumed its sittings on April 26th, Sir KINGSLEY WOOD (Parliamentary Secretary to the Ministry of Health) referred to the promise given by Mr. Chamberlain at the previous sitting to reconsider his attitude in regard to the payment of sickness and disablement benefit while insured persons were in a poor-law institution, hospital, or other institution. His right hon. friend recognised, he said, that there might be cases where a lump sum should be given, and if Mr. Broad would withdraw his amendment he (Sir Kingsley Wood) would be prepared to move an amendment providing that the matter should be left to the discretion of the society or committee.

Dr. VERNON DAVIES: Does this mean up to the maximum of £50?

Sir KINGSLEY WOOD: Yes.

Mr. BROAD'S amendment was withdrawn and Sir KINGSLEY WOOD'S proposed amendment was agreed to.

Clause 3: Administration of Medical Benefit.

On Clause 3 (which amends Section 24 of the principal Act as to the administration of medical benefit),

Mr. JOHN said he wished to oppose the clause on the ground that it proposed to refuse recognition or approval to medical institutions that have been approved for the last 13 or 15 years, and also prevented similar institutions from being recognised or approved in future. He was at a loss to understand why this clause had been inserted, because the medical schemes or institutions which were in existence met the desire for a greater scope in medical treatment or benefit than could be given by the individual panel practitioner. The Act itself only gave the insured person a guarantee of one doctor, who was not called upon to have more skill than could be reasonably expected. The medical institutions to which he referred coördinated medical treatment and benefit in such a way that the members were entitled to the services of a number of doctors in respect of both medical and surgical treatment. They were also entitled to electric treatment, massage, light treatment, and laboratory advice. If it was intended to refuse recognition to these institutions, a large number of them would be placed in an awkward position.

Sir KINGSLEY WOOD said that although he did not wish to condemn what had been done under the guise of making individual arrangements, unfortunately a number of institutions had purported to make arrangements to escape the ordinary normal arrangements of medical benefit. When the Act was passed it was never intended that a number of people should be able to band themselves together, and by some sort of device, put themselves in exactly the same position as those existing institutions which were covered by Section 24 of the principal Act. The result was that the Department had found itself with little or no control over such institutions. It had been the sole aim of the Ministry of Health to see that the Act was properly administered, and particularly that the standard of medical treatment was as high as they could make it. It was very unfair, and not right, that a number of these so-called institutions should be in the position of being under no obligation to render any returns to the Department and over which they had no effective control, to see that the standard of medical treatment was sufficient. When he told the Committee that this sort of society made a profit out of a matter in which there ought not to be any profit, and that the payment to the doctors was not of a nature which ensured the best medical attention, he thought they would agree that the Government were right to intervene as they had done under this clause. They said that if existing institutions wished to put themselves within the same conditions as the old existing societies under the principal Act, and have the same objects and purposes as the old societies which had to obey rules and regulations, then they must apply to the Ministry of Health. If they did so their claims would be examined sympathetically, but with the sole object of ensuring an adequate standard of treatment for their members. He also wished to make it quite clear that if such societies were approved they would have to supply proper returns to the Department and generally conduct their institutions in the same manner as the original institutions had to do.

Dr. DAVIES said that if Sir Kingsley Wood meant that it was quite possible that in future the Ministry would sanction other schemes on similar lines to existing schemes, he would be very much opposed to such a course. "Institutions" was another name for colliery clubs. On the second reading of the Bill he spoke in favour of those clubs, and said that they had done extremely good work, but he sincerely hoped that no new ones would be allowed.

Sir KINGSLEY WOOD: No new ones?

Dr. DAVIES said that the right hon. gentleman's speech was not very definite on the point. The success of all these institutions depended on the standards and qualifications of the medical men. He said, on second reading, that he was quite convinced that the medical men associated with these schemes were competent in every shape and form, and that they had done, and were doing, extremely good work, but they had to bear in mind that for some years now the British Medical Association had set their face very definitely against this type of institution or practice. Every week they put in the *British Medical Journal* a warning notice asking anybody applying for such a job to consult them first. When the present competent medical men retired, those who took their places would do so contrary to the advice of the British Medical Association; the highest type of doctor would not apply for these appointments. The majority of medical men liked to keep in touch with, and sympathy with, their fellows, and if they found that a big proportion of the profession said: "We would rather you did not take these appointments; perhaps it is not unprofessional, but it is inadvisable to do so," the best type of medical man would not accept such appointments, and ultimately they would be landed with a type of medical man, who though fully qualified was yet perhaps not the highest type of man in the profession, and ultimately the nstitutions would suffer.

Sir KINGSLEY WOOD said he would not like the medical members of the Committee to be disturbed, and he would give an assurance that the Department had no intention of dealing with any but those systems and societies which were already in existence. They did not propose in any way to encourage the practice.

Dr. WATTS said that he did not wish to encourage these institutions but if the clause was allowed to remain there was a danger. With the growing discontent in the country generally with the nature of the treatment people got under National Health Insurance, a large number of persons were anxious to band themselves together in order to make arrangements with private doctors under a system by which the insurance committees would hand over to them the capitation fee, and the patients would be willing, so he was informed, to pay a supplementary fee in order to make sure that they got decent attendance as insured persons. He held no brief for the institutions or clubs; he believed the medical attendance they gave to be equally as bad as—if it were possible to be as bad as—the medical attendance under National Health Insurance. (Laughter.) Hon. Members might laugh, but he was speaking from some knowledge of the matter. It was not the fault of the doctors. Under the National Health Insurance scheme a doctor's time was taken up in a large measure by red-tape regulations and by keeping silly records which were of no use to anybody, and which, when they arrived at the Ministry of Health, were, he was given to understand, destroyed, no use being made of them. If certain groups of the insured population banded together and made a private arrangement with medical men they would be prevented from doing so by this clause, and he therefore supported the proposal to delete it.

Mr. JOHN withdrew his opposition to the clause, which was agreed to.

Clause 4: Subscriptions to Charitable Institutions.

On Clause 4 (amendment of Section 26 of the principal Act as to subscriptions to charitable institutions). The clause provides that a society "in the case of which no disposable surplus was disclosed on the last preceding valuation, or an insurance committee, may from time to time, with the consent of the Minister, make subscriptions or donations of an eleemosynary character to hospitals and similar institutions."

Mr. BRIANT moved to leave out the words "of an eleemosynary character." His object, he said, was to remove any difficulties in the way of extending these subscriptions to any likely societies that might not exist at present, but might exist in the future.

Sir KINGSLEY WOOD said that this was perhaps a more important amendment than the hon. gentleman might realise. The particular words to which he had taken exception were intended to emphasise the nature of the subscription to be made by the societies to charitable institutions, and the intention was to limit the contribution which the society should make to general charitable gifts of an unconditional character, having regard to the excellence of the institution and the good that it was doing. The clause endeavoured to put an end to a system by which advantage was taken to enter into contracts with institutions and, in return, receive certain benefits for the society's members. They desired to see that if the societies made

charitable gifts in the future they should be genuine and not the kind of thing to which he had referred.

Dr. DRUMMOND SHIELS said that he would like the Parliamentary Secretary to the Ministry of Health to explain the term "contracts" used in his speech. The speeches which the Committee had heard had shown the obviously unsatisfactory character of the present medical attention given under the National Insurance Act, and they were warned against societies competing against each other to provide benefits under this scheme. He was interested in this section in connexion with the important matter of specialist benefit. He understood that societies in the past had tried to make arrangements with voluntary hospitals that, in return for a donation, a certain number of beds would be set aside. He knew that in many cases arrangements had been refused, as the managers of voluntary hospitals had not felt that they were entitled to make such allocations. He would like to know if an arrangement with a voluntary hospital for a certain number of beds to be set aside for a particular approved society would be allowable under this clause?

Sir KINGSLEY WOOD said he thought that the hon. Member would have an opportunity of raising this matter on another part of the Bill.

Lieut.-Colonel FREMANTLE asked whether such invaluable agencies as district nursing associations, the Queen Victoria Jubilee Nurses, and midwives societies, had been definitely and intentionally omitted, or were they included under the words "similar charitable institutions"?

The amendment was withdrawn.

Mr. HARVEY moved to leave out the words "and similar" and to insert thereof the words "dispensaries and other."

Sir KINGSLEY WOOD said he could assure his hon. friend that they did not want to rule out any charitable gifts of such a character as those to such an institution as the District Nursing Association. On the other hand, he must call the attention of the Committee to the fact that for the first time the schedule made provision for the payment of the whole, or any part, of the cost of the provision of nurses for members.

The amendment was agreed to.

The National Health Insurance Bill was further considered by Standing Committee of the House of Commons, and a detailed report will be given in a coming issue of THE LANCET.

HEALTH INSURANCE (PROVISIONAL REGULATIONS).

On Thursday, May 3rd, on the motion for the adjournment,

Mr. A. V. ALEXANDER said he desired to bring to the notice of the Government a very strong protest, first of all with regard to the increasing practice of making new breaches of contract and creating new crimes and penalties by means of regulation instead of by Act of Parliament. The necessity for some regulations under the National Health Insurance Act was apparent, but in the regulations to which he desired to draw attention, a very vital principle was involved which ought not to have been dealt with by regulation, but ought to have been the subject of amending legislation. The regulation of which he complained was found in the Medical Benefit Regulations (No. 2), 1928, which was laid on the Table of the House on April 17th. In those regulations they found the extraordinary clause:—

> Clause 4 of Part I. of the Third Schedule to the principal Regulations shall be read and have effect as if the following paragraph were added thereto: "A chemist shall not give, promise or offer to any person any gift or reward (whether by way of a share or dividend on the profits of the business, or by way of discount, or rebate, or otherwise) as an inducement to, or in consideration of, his presenting an order for drugs or appliances on a prescription form provided by the Committee."

Effect of the Clause on the Coöperative Movement.

He wanted members of all parties who were interested in the coöperative movement to observe that the clause prevented, in future, any chemist's department and a coöperative society from continuing its practice in so far as its business was conducted under the terms of the National Health Insurance Act. Any member of a coöperative society who was also a member of an approved society, who took a health prescription to be made up in a coöperative store instead of an ordinary chemist's shop, would not be allowed to be given a note to the effect that he had taken goods from the store at the rate of 5*d.*, which was the flat rate allowed to the chemist for his services. In 1925 the Parliamentary Committee of the coöperative movement had overtures made to it by the Retail Pharmacists' Union, desiring that coöperators should undertake that, in future, they would not allow the value of the prescription made up for their members under the National Health Insurance Act to count as part of their business for the final distribution of the surpluses of the coöperative societies. The Coöperative Committee said that they could not consider such a proposal, because it would cut at the root of the basic principle on which the coöperative movement did business. He had obtained an assurance from one of the principal officials of the Ministry of Health that there was nothing against the practice of allowing a member of an approved society, who was a member of a coöperative society, to share in the rightful benefits of his mutual association. Since then they had never received a word of communication from the Minister of Health. On April 21st, however, a circular was issued to the local insurance committees, which was obviously a circular issued from headquarters. The regulations did away entirely with the present perfectly genuine trade practice of the coöperative societies in this country. The reason for the Retail Pharmacists' Union bringing pressure to bear on the Government in this matter was simply to get the Government to take sides against a body which they regarded as a trade competitor. He imagined that the only real ground of defence which the Minister of Health could possibly put forward for this action was that it had been stated that considerations were being given for prescriptions to be taken to certain chemists, and that that might lead to corruption and malingering. How many prescriptions would have to be used up by a person before he could get any substantial monetary advantage to the extent of leading to malingering? If there existed a real danger of considerations being offered to aid malingering, what were the doctors doing? Surely it was the duty of panel doctors to see that they gave prescriptions only where there were genuine cases to be treated.

Increased Cost of Drugs and Appliances.

Sir KINGSLEY WOOD (Parliamentary Secretary to the Ministry of Health) said the regulation to which Mr. Alexander had referred was not directed against any particular body, association, or individuals, but was in the true interests of the proper administration of the National Health Insurance funds. It was well known that the position of the drug fund in connexion with national insurance had given serious anxiety to the Government and the approved societies. There were some 11,000,000 people in England and Wales who came under the ordinary drug arrangements with chemists. The average cost of drugs and appliances so far as the National Health Insurance Act was concerned had very steadily and very seriously increased. For instance, in 1916 the total cost of drugs and appliances supplied by chemists was £634,651. In 1926 that figure had risen to a sum of £1,729,078, and the Ministry of Health had been driven to the conclusion, which he thought was shared by those people who had been concerned with the administration of National Health Insurance, that whilst a certain increase was no doubt due to increased sickness, there was considerable evidence of extravagant prescribing. The difficult situation was accentuated because, under the National Health Insurance Act, there was only a certain sum permitted for the cost of drugs. Directly that sum was exceeded a serious question arose as to where the increase in cost was to come from. The question that confronted his Department was whether there should be a revision of the drug tariff, or whether the fees ought to be reduced. If either of these matters were to be taken in hand it would undoubtedly be very serious, especially so far as the smaller chemist's business was concerned. Therefore his Department had several consultations with the Retail Pharmacists' Union, which represented some 8000 chemists throughout the country. They pointed out to the union that this was a case which obviously had to be met, and asked whether the union was prepared to take the matter in hand and set their own house in order? The representatives of the union gave an undertaking to his Department that they would be responsible for the proper administration of the fund, and see that it was conducted within its proper financial limits, and that the service was adequate. But, as was perfectly natural, the union said that if they were going to take this unlimited liability, proper conditions must be laid down as to the administration of this drug traffic. To show the House that there was no attack upon the coöperative societies he would cite certain instances to indicate what occurred in relation to this important benefit. A leaflet had been distributed broadcast in a particular area of London to the following effect:—

> "Insured persons will receive a free gift, value 6*d.*, for two weeks only, Sept. 19th to Oct. 3rd, 1927. Every person bringing a panel prescription to be dispensed at the above address will receive, free of charge, certain items value for 6*d.*"

Then there was the further statement:—

> "No matter where you live or who your doctor is, you are quite free to bring your prescription to Mr. ——. He is the most reliable chemist in the district."

That was, the gentleman who was offering 6*d.* He said:—

> "He is really interested in your particular case, and will give free advice to patients if required. Please bring your prescriptions as early in the day as possible. Note only address. No branches."

He (Sir Kingsley Wood) had another leaflet issued by a chemist who offered in the same way another inducement to insured persons to go to him with their prescriptions, and in another case a draw was to take place among insured persons, and it was stated that the insured person who took his prescription to the particular chemist and drew the winning number, would receive a solid-gold wristlet watch. Every member of the House would see that that was a most undesirable practice, and they had therefore laid down in this regulation that these inducements and gifts were not to be given. Once they directed a regulation of that kind against this particular practice, they obviously could not, in fairness to the other chemists who administered the Act, permit inducements to be given by coöperative societies in the same connexion.

The motion for the adjournment was carried by 200 votes to 97.

HOUSE OF COMMONS.

WEDNESDAY, MAY 2ND.

Preservatives in Butter and Cream.

Mr. THOMAS KENNEDY asked the Secretary of State for Scotland if he had received any representations from traders in Scotland regarding the effect of the regulations prohibiting the use of preservatives in butter and cream; and whether, in view of the special difficulties in Scotland involving serious loss to retail traders through the regulations, he would consider the desirability of modifying the restriction on the use of preservatives during the summer months.—Sir J. GILMOUR replied: I have received the representations referred to by the hon. Member. I have also received representations supporting the prohibition of boric acid in cream. As advised, I see no reason to modify the restriction on the use of preservative for these articles.

Regional Medical Officers' Fees.

Mr. BROMFIELD asked the Minister of Health whether he was prepared to allow regional medical officers' fees paid by approved societies to be charged against the benefit fund account instead of against the administration account, in view of the fact that a large number of approved societies were on the border-line in respect to administration, which fact had a tendency to prevent societies using the regional medical officers as often as they would do if the cost was borne by the benefit funds instead of, as now, by the administration account.—Mr. CHAMBERLAIN replied: No, Sir. The fees in question are part of the administrative expenditure of Approved Societies, and must, under the Act, be charged to the administration account. An increase has been made, as from the present year, in the amount per member which societies may appropriate for purposes of administration, and I have no reason to think that the charges for references to the regional medical Officers, which amount on the average to under a halfpenny per member per year, cannot be met in the proper way out of the administration account.

Accidents in the Woollen and Worsted Industries.

Mr. JOHNSTON asked the Home Secretary the number of accidents caused by lifting heavy weights in the woollen and worsted industries prior to the order fixing maximum weights compared with the number of such accidents since the order became effective.—Sir WILLIAM JOYNSON-HICKS replied: I regret that the figures necessary for any such comparison cannot be given. At the time these regulations were made, no evidence was available as to the total number of cases of injury from lifting of heavy weights. What happened was that one of the employers' associations submitted to the Factory Department evidence of injuries to workers employed in their section of the industries, and on this evidence the Factory Department invited the National Wool (and Allied) Textile Industrial Council to take the matter up. The Council thereupon appointed a special committee, on which both employers and workers were represented, to investigate the question. As a result of this inquiry unanimous agreement was reached and the regulations were made, at the request of the Council, to give effect to this agreement.

THURSDAY, MAY 3RD.

School Medical Services.

Dr. VERNON DAVIES asked the President of the Board of Education the cost of the school medical services classified under medical officers, nurses, school clinics, and treatment by dentists and oculists, for the last three years, respectively?—The Duchess of ATHOLL (Parliamentary Secretary to the Board of Education) replied: I am afraid that the returns made by local authorities do not enable me to analyse the expenditure under the heads named in the question, but the total cost of the school medical services for the last three years for which returns are available are as follows:—

	Gross expenditure.	Receipts.	Net cost.
	£	£	£.
1924–25	.. 1,307,228	 53,899	 1,253,329
1925–26	.. 1,441,415	 60,970	 1,380,445
1926–27	.. 1,516,995	 66,010	 1,450,985

Substitutes for Cream.

Viscount SANDON asked the Minister of Health if he had any information as the the use of substitutes for cream by bakers and confectioners involving the breach of the Milk and Dairies Act; and what steps were being taken to circumvent this.—Mr. CHAMBERLAIN replied: It is a well-known fact that substitutes for cream are commonly used by bakers and confectioners, but so long as these substitutes are not injurious to health and the articles in which they are used are not incorrectly described. There is no offence in regard to which statutory proceedings could be taken. It is not a matter to which the Milk and Dairies Acts apply.

Miners' Phthisis.

Mr. DAVID GRENFELL asked the Home Secretary whether he had definitely arranged for the extension of the schedule of industrial diseases so as to include men who contracted miners' phthisis while following the occupation of rock-boring in coal mines by the use of compressed-air machines: and how many cases of disability from this cause had been notified to his department in the last four years.—Sir WILLIAM JOYNSON-HICKS replied: The matter is one which will have to be dealt with by a scheme under Section 47 of the Workmen's Compensation Act, 1925, and I have asked the Departmental Committee on Workmen's Compensation for Silicosis to advise as to the terms of a scheme. I have offered for this purpose to appoint to the Committee two representatives of the industry on each side, but have not yet received the reply of the Miners' Federation. The disease is not notifiable and no statistics are available, but its incidence, to a limited extent, in the coal-mining industry has been established.

Vaccination Committee's Report.

Lieut.-Colonel FREMANTLE asked the Minister of Health when the Report of the Departmental Committee on Vaccination would be published.—Mr. CHAMBERLAIN replied: This report is now being printed and will be published at an early date.

Treatment of Venereal Disease.

Miss LAWRENCE asked the Minister of Health the amount of grant given towards the treatment of venereal disease in the years 1921 and 1927, and the amount which local authorities had been informed was the maximum they would receive for the year 1927–28; the number of treatment centres for venereal disease in England in 1921 and at the present time; and the number of health authorities where no such centres were provided.—Mr. CHAMBERLAIN replied: The grants paid to local authorities for this purpose amounted to £421,687 and £272,921 during the financial years 1921–22 and 1927–28, respectively. The maximum grant payable to these authorities in respect of the financial year 1927–28 is £286,763. There are at the present time 177 treatment centres in England, compared with 184 in 1921, the reduction being due mainly to the policy adopted in some large towns of concentrating the work of two or more centres in one centre, at which extended facilities for treatment have been provided. Facilities for the treatment of venereal disease have been provided by all the local authorities responsible for this work, but in a few cases the treatment centres are outside the administrative areas of the authorities.

MONDAY, MAY 7TH.

League of Nations and World Output of Morphine.

Mr. SCRYMGEOUR asked the Secretary of State for Foreign Affairs whether he was aware that the world output of morphine had increased between 1921 and 1926 from 30 to 60 tons; and whether, in view of the statement of the Italian representative to the League of Nations that the British Government had concealed the real figures of British drug exports, he had any official information to explain the difference between the amount of drugs imported into America and the amount admitted by British exporters.—Mr. G. LOCKER-LAMPSON (Under-Secretary for Foreign Affairs) replied: The answer to the first part of the question is in the negative. A statistical summary recently issued by the League gives the production for 1926 as 40,245 kilos, and the production for 1921 as 29,657 kilos (about 40 and 30 tons respectively), but complete statistics are not available. Both the figures in question are incomplete, and the figure for 1921 more so than that for 1926. Any comparison, therefore, between them would be unsafe.

Further, the 1926 figure includes large quantities of morphine which were produced solely for transformation into non-dangerous products, such as codein. The actual quantities of morphine manufactured for sale as such were far smaller. So far as Great Britain is concerned, the manufacture of morphine has shown a steady decrease during the last five years. I am not aware that the Italian representative on the Advisory Committee charged His Majesty's Government with concealing their drug exports. He called attention to the fact that the amount of raw opium returned by Great Britain as exported to the United States was less than the amount of raw opium returned by the Government of the United States as imported from Great Britain. This discrepancy is being examined by the two Governments, but is probably due, in part, to the fact that the returns of the two Governments relate to different periods, the British returns being for the calendar year, the United States returns for the fiscal year, from July to July, and in part to the fact that opium sold from Great Britain may not be actually exported from Great Britain, but may be conveyed direct from a foreign port to the United States. The British figures are official figures compiled from the export licences issued by the Home Office, and there is no reason to question their accuracy.

Classification of Milk.

Mr. ROBERT YOUNG asked the Minister of Agriculture the total amount of milk for commercial purposes produced during the past two years; how much of it was pasteurised milk, Grade A milk, and Grade A tuberculin-tested milk; and how much described as clean milk, purified milk, &c., was produced for consumption.—Mr. GUINNESS replied: The total amount of milk produced in England and Wales during the past two years, exclusive of milk fed to calves and pigs, but inclusive of milk manufactured into various products, both on and off farms, as well as milk consumed in liquid form, has been estimated as follows: June to May (per million gallons): 1925–26, 1135; 1926–27, 1150. As regards the proportions of these quantities which may be classified as officially designated milks, it is estimated that "Certified," "Grade A (T.T.)," and "Grade A" milks constitute approximately 1 per cent. of the milk consumed as liquid milk. No reliable estimate for "pasteurised" milk is available. The terms "clean" and "purified" are not recognised as official designations; they are entirely relative terms, and as they signify no definite or absolute standard, the quantities of milk sold under them are unknown.

Death Certificates and Reports to the Coroner.

Sir CHARLES OMAN asked the Minister of Health whether, as it was part of the duty of a registrar of deaths to decide whether to give a burial certificate or whether to send a case to the coroner, he would provide that officers of the boards of guardians should not be appointed registrars of deaths for the future, and vice versa.—Mr. CHAMBERLAIN replied: A registrar of births and deaths is required by regulations to report to the coroner every death which, on the information before him in the medical certificate or otherwise, was due to any one of certain prescribed causes or occurred in certain prescribed circumstances, and, pending consideration by the coroner, to defer registration and the issue of an authority for burial. He has thus no discretion to decide whether to report such cases or not. I am aware of no reason for apprehension that registrars of births and deaths do not discharge faithfully the duties of their office in those cases where they also hold poor-law office.

BRADFORD ROYAL INFIRMARY.—The Duke and Duchess of York have laid the memorial stones of the new infirmary at Daisy Hill. This great hospital is estimated to cost at least £500,000, of which £380,000 has already been given or promised.

ROCKEFELLER MEDICAL FELLOWSHIPS. — The Medical Research Council will shortly award these Fellowships for the academic year 1928–29. Applications should be lodged with the Council not later than June 1st, 1928. The Fellowships are provided from a fund with which the Medical Research Council have been entrusted by the Rockefeller Foundation. Fellowships are awarded by the Council, in accordance with the desire of the Foundation, to graduates who have had some training in research work in the primary sciences of medicine or in clinical medicine or surgery and are likely to profit by a period of work at a University or other chosen centre in the United States before taking up positions for higher teaching or research in the British Isles. A Fellowship will have the value of not less than £350 a year for a single Fellow, with extra allowance for a married Fellow, payable monthly in advance. Travelling expenses and some other allowances will be made in addition. Full particulars and forms of application are obtainable from the Secretary, Medical Research Council, 15, York Buildings, Adelphi, London, W.C.2.

Obituary.

THOMAS VILLIERS CROSBY, M.D. LOND.

Dr. T. V. Crosby, of Leicester, died on April 26th, after two and a half years' illness, which began just after he had retired from active practice. His death at the age of 57 will be deeply regretted by those who worked with him.

The second son of the late Mr. James Crosby, of Burlescombe, in Devon, he was educated at Blundell's School, Tiverton, and at University College, London, from which he graduated in medicine in 1894. As a student at University College Hospital and afterwards as resident, he came into contact with several men who were to be fellow practitioners and life-long friends in Leicester, where he settled on leaving London. He was appointed assistant physician to the Royal Infirmary in 1902, and his practice soon became a large one, so that assistance was eventually required. He was joined in partnership by Dr. Ernest Parker in 1916 and later by Dr. A. V. Pegge, Dr. Ernest Garratt, and Dr. Harold Ingham, all of whom, like himself, had served for a time as medical resident officers at the infirmary.

DR. T. V. CROSBY.

Photograph by F. Sproston.

Apart from his duties as a general physician, Dr. Crosby was a skilful anæsthetist. A colleague at the infirmary writes of him that he was "a conscientious worker, always ready to give a helping hand to others; always perfectly willing to assist in anything which might help in the smooth running of the medical work. His kindly disposition endeared him to patients and colleagues alike. He had many friends, enjoyed being in company, and was fond of sport, but in recent years his work monopolised his whole time and he found little chance of recreation. Country bred, he lived an active life in a large city, but his tastes were simple, he cared nothing for show, and his sympathies were broad. Such characteristics form the most laudable of our profession. The memory of T. V. Crosby will be cherished alike by patients and colleagues as one of unusual kindness."

For some years Dr. Crosby served the city as guardian of the poor, but during the war he had to relinquish this responsibility in favour of service with the Fifth Northern General Hospital, a Territorial unit to which he was appointed, with a major's commission, in 1908. In his earlier years he was a fair shot, a good horseman, and a Rugby forward, but leisure pursuits were reduced to a minimum long before his retirement at the end of 1926. The illness which followed was borne with the imperturbability that had characterised his professional life.

Dr. Crosby married in 1898 the second daughter of Mr. G. J. B. Woolley, J.P. She survives him with two sons, one of whom is Dr. G. J. V. Crosby, of Bushby, Leicester.

Medical News.

UNIVERSITY OF OXFORD.—At a Congregation held on May 3rd the following degrees were conferred:—

D.M.—L. N. Jackson.
B.M.—C. W. Flemming.

UNIVERSITY OF CAMBRIDGE.—At a Congregation held on May 3rd the following degrees were conferred:—

M.B., B.Chir.—P. E. Pym, G. D. Thomson.
M.B.—C. E. Kellett.
B.Chir.—G. C. Milner.

UNIVERSITY OF SHEFFIELD.—At the undermentioned examinations held recently in the Faculty of Medicine the following candidates were successful:—

Final M.B., Ch.B. (Part I.).—John D. Gray and Bessie Hatherley.

Third M.B., Ch.B.—William H. Carlisle, Abraham Cohen, Frank Ellis (with distinction in Pathology), Ralph B. Gould, Iris M. Moody, Sankar K. Panniker, Thomas H. Pullar (with distinction in Anatomy, Pathology, and Pharmacology), Isaac Slesnick, and John H. Wilbourn.

ROYAL COLLEGES OF PHYSICIANS OF LONDON AND SURGEONS OF ENGLAND.—At the final Examination of the Conjoint Board held from March 26th to April 20th the following candidates were approved in the subjects indicated:—

Medicine.—V. E. N. Allen, Bristol; M. A. E. Anous, Cairo and Middlesex; Lucy E. Arthur, Royal Free; H. F. Bateman, Cambridge and St. Bart.'s; W. A. Bellamy, St. Bart.'s; T. H. Berrill, Bristol; C. V. Bloom and K. C. Blyth, London; N. J. Boulton, Guy's; Beatrice A. Butterworth, Royal Free; L. A. Canaan, London; Mavis H. D. Carr, Cambridge and Royal Free; B. R. Caygill, Leeds; Nellie Clifton, Royal Free; L. I. Cohen, London; Elizabeth Cooper, Royal Free; J. H. Crawford, St. Mary's; Evelyn M. Davies, King's Coll.; W. F. de Villiers, Cape and London; Marjorie M. Dobson, Royal Free; R. M. Dowdeswell, Cambridge and St. Thomas's; Geraldine W. Everett, Royal Free; P. H. Fox, Cambridge and St. Bart.'s; Agnes B. Francklyn, St. Mary's; Leslie Godlove, Leeds; Valentina P. Guercken, Westminster; C. K. Haskard, Adelaide and London; W. E. Herbert, Guy's; Violet L. de A. Hickson, Westminster; D. R. House, Bristol; K. Jilani, Liverpool; C. H. Johnson, Guy's; Esther M. Killick, Leeds; K. E. Lane, Guy's; Jane S. McDowell, Charing Cross; K. L. Malhautra, Univ. College; A. Milner, Leeds; Edith G. Niven, Univ. College; Dorothy M. M. Rees, Charing Cross; R. D. Robinson, St. Bart.'s; W. P. Roe, Guy's; Pattie E. Rose, St. Mary's; Margaret C. Rosser, Birmingham; Alice I. Roughton, Cambridge; Eluned Saunders, Westminster; Christine F. T. Saville, Univ. College; Elizabeth S. Smith and G. A. Stevenson, Birmingham; Frances J. Vinter, Royal Free; A. T. D. Whitfield, Birmingham; and G. W. Willcox, Cambridge and St. Thomas's.

Surgery.—G. M. Ali, Royal Free; Constance E. Allen, Charing Cross; G. Allen, London; Sofia Antonovitch Royal Free; T. C. Baker, St. Mary's; W. A. G. Bell, Cambridge and St. Thomas's; G. Bellman, St. George's; H. Bernstein, Univ. College; F. A. Blackwood, St. Thomas's; J. V. Broad, St. George's; M. K. Bryce, London; Beatrice A. Butterworth, Royal Free; L. A. Canaan, London; H. A. Clarke, Guy's; A. M. Clarkson, Univ. College; W. A. Clements, Sheffield; Dorothy M. Conyers, Royal Free; S. J. Cope, St. Thomas's; T. M. Corcoran, Univ. College.; E. Courtin, St. Thomas's; A. M. Cunningham, Univ. College; T. Dagger, Liverpool; A. Danin, Guy's; H. W. Daukes, St. Thomas's; F. T. Doleman, St. Mary's; E. C. Duffett, Guy's; E. L. Edmondson, Cambridge and London; H. F. Ellis, Liverpool; J. W. Ellis and M. M. El Mishad, Guy's; G. W. Etches, Leeds; I. Friedman, Guy's; L. Godlove, Leeds; F. W. H. Grenier and J. P. Gubbins, London; H. S. Hamlin, St. Thomas's; W. F. L. Hannay, Guy's; H. Harris, Manchester; R. T. Hicks, Univ. College; B. Hoffenberg, Liverpool; J. M. Hulett, Guy's; K. T. Hunter, Toronto; J. Ives, St. Mary's; M. Jafar, Punjab; L. A. Joelson, London; S. E. Knowles, Guy's; M. L. Kreitmayer, St. Bart.'s; A. J. C. Latchmore, Leeds; A. J. Leslie-Spinks, Oxford and Westminster; A. L. Light, Leeds; C. M. MacGeoch, Birmingham; H. M. Mills, Royal Free; L. Milner, Guy's; G. P. Nixon, St. Bart.'s; J. P. O'Donnell, Leeds; L. G. M. Page, St. Bart.'s; A. J. D. Perkin, St. Thomas's; Alice D. K. Peters and H. G. Pritchard, Charing Cross; A. S. Rajasingham, Middlesex; R. G. E. Richmond and H. G. G. Robertson, St. Thomas's; R. S. Robinson, Middlesex; H. W. Round, Birmingham; I. A. Sabri, St. Bart.'s; M. V. Samuel, Adelaide and London; S. Schenkman, London; J. E. Schneider, St. Thomas's; D. A. Seaman, Birmingham; G. M. A. Shaikh, London; A. Southgate, Charing Cross; T. T. Stamm, Guy's; A. R. Thomas, St. George's; E. W. Thompson, Manchester; V. C. Thompson, St. Bart.'s; J. G. Thwaites, St. Thomas's; B. T. Utley, St. George's; H. D. Vasey, St. Thomas's; V. C. Verbi, King's Coll.; P. Wiles, Middlesex; G. W. Willcox, St. Thomas's; L. V. Williams, St. Bart.'s; Muriel Williams, King's Coll.; L. K. Wills, Guy's; W. A. Wilson, Univ. College; J. Winter, Middlesex; F. W. J. Wood and T. C. Yip, St. Bart.'s; and E. Zimbler, Middlesex.

Midwifery.—S. S. Ahluwalia, Lahore; Gulzar M. Ali, Royal Free; G. Allen, London; M. W. Atkinson, Middlesex; T. C. Baker, St. Mary's; H. F. Bateman, St. Bart.'s; W. A. G. Bell, Cambridge and St. Thomas's; W. A. Bellamy, St. Bart.'s; Mark Berkeley, Royal Free; Kathleen L. Bland, Univ. College; K. S. P. Blatchley, Edinburgh; N. J. Boulton, Guy's; G. H. Bradshaw, Cambridge and St. Bart.'s; J. V. Broad, Cambridge and St. George's; M. A. Chamberlain, Manchester; Rochelle Churin, Royal Free; A. M. Clarkson, Univ. College; W. A. Clements, Sheffield; Lilian M. C. Clopet, Cardiff; S. J. Cope, St. Thomas's; J. E. Curnock, Charing Cross; T. Dagger, Liverpool; K. K. Dalal, Middlesex; A. Danin, Guy's; H. W. Daukes and D. C. L. Derry, St. Thomas's; P. C. C. de Silva, King's Coll.; W. F. de Villiers, London; F. T. Doleman, St. Mary's; H. F. Ellis, Liverpool; W. T. Ellis, Manchester; N. B. Fadia, Bombay; M. Gamboa, St. Bart.'s; Agnes G. Gillespie, Liverpool; H. Gordon, Durham; I. Gordon, St. Bart.'s; C. Graham, Belfast; Valentina P. Guercken, Westminster; H. W. Guinness, St. Bart.'s; Hafizuddin, Charing Cross; A. G. J. Harris, St. Bart.'s; Violet L. de A. Hickson, Westminster; C. F. House, St. Thomas's; Esme I. Hyam, Univ. College; J. Ives, St. Mary's; D. T. Jones, Guy's; E. G. M. Jones, Univ. College; W. D. G. Jones, Guy's; C. Jotikasthira, St. Thomas's; A. Kellner, London; B. Kettle, St. Bart.'s; Florence E. Kingsley, Westminster; M. L. Kreitmayer, St. Bart.'s; G. Lal, London; K. E. Lane and T. C. Lansdale, Guy's; A. G. Lloyd, Durham; F. T. F. Lutter, Cambridge and St. George's; T. K. S. Lyle, Cambridge and King's Coll.; R. G. Macbeth, Oxford and King's Coll.; C. M. MacGeoch, Birmingham; Mary I. C. Mackintosh, Manchester; Kathleen M. MacLaren, Westminster; C. E. Martin, Birmingham; W. T. Mills, St. Bart.'s; L. Milner, Guy's; L. H. Morris, Cambridge and London; L. P. Naz, Univ. College; G. S. Nightingale, London; S. P. Notani, Bombay; R. I. O'Farrell, Sheffield; G. W. Oliphant, Guy's; C. R. L'E. Orme, Cambridge and King's Coll.; P. M. Oxley, St. Bart.'s; A. J. Parer, King's Coll.; T. Parukutti-Ammal, Royal Free; A. W. Patton, St. Bart.'s; M. G. Pearson, Westminster; A. J. D. Perkin, Cambridge and St. Thomas's; I. E. Phelps, St. Bart.'s; P. H. L. Playfair, Cambridge and King's Coll.; A. S. Rajasingham, Middlesex; R. A. C. Rice, St. Bart.'s; R. S. Robinson, Middlesex; J. A. Robson, St. Bart.'s; G. Rocyn-Jones, Cambridge and King's Coll.; W. P. Roe and E. B. Rogers, Guy's; A. L. Rosenthal, Manchester; Margaret C. Rosser, Birmingham; I. A. Sabri, St. Bart.'s; K. T. Samatapala, King's Coll.; M. V. Samuel, Adelaide and London; J. E. C. Sayers, St. Thomas's; S. A. Scorer, H. M. Sein, and H. Selby-Brown, Guy's; R. R. Shapland, Middlesex; H. T. Simmons, Manchester; U. P. Sinha, Calcutta and Patna; T. T. Stamm, Guy's; M. Sternfeld, Freiburg; L. Taylor, Sheffield; R. S. Thomas, Guy's; J. G. Thwaites, St. Thomas's; W. E. Tucker, Cambridge and St. George's; R. G. L. Waller, Westminster; P. Wiles, Middlesex; L. K. Wills, Guy's; Kathleen Wilson, King's Coll.; W. A. Wilson, Univ. College; F. W. J. Wood, Cambridge and St. Bart.'s; F. C. A. Wright, King's Coll.; J. M. Wrigley, Sheffield and London; and T. C. Yip, St. Bart.'s.

THE RATING OF HOSPITALS.—The Devonshire Valuation Committee recently convened a conference of representatives of rating and assessment committees, the object of which was to fix a uniform rate for the assessment of voluntary hospitals in the county. The assessments at present vary enormously, the lowest figure per bed being 3*s.* and the highest £4 4*s.* The county valuation officer suggested £3 per bed gross, but the conference decided that the amount should be 7*s.* 6*d.*, to include nurses' beds.—Mr. Walter Kewley, the house governor of Middlesex Hospital, has written a letter urging the total exemption of hospitals from local rates.

CONTINENTAL ANGLO-AMERICAN MEDICAL ASSOCIATION.—The annual meeting, the first since the late war, was held at the Hôtel de Paris, Monte Carlo, on May 1st, members attending from the whole length of the Italian and French Rivieras. Dr. R. Pryce Mitchell (Monte Carlo), who presided, explained the objects of the Association and acknowledged the debt of gratitude due to the hon. secretary, Dr. R. Sherwood-Dunn (Nice) for his successful efforts in resuscitating the Association. Dr. Sherwood-Dunn, in presenting his report, said he had visited Paris for a personal interview with Dr. R. Turner, a former hon. secretary, and other old members, and had endeavoured to communicate with the 122 medical men and women whose names appeared in the last issue of the Continental Anglo-American Medical Directory. The report was approved and it was decided to limit membership of the Association to persons of British and American nationality and to those possessing British and American qualifications who are rightfully practising in Europe or Northern Africa. The annual subscription was raised from 40 to 100 French francs. At a banquet held the same evening Dr. H. Warren Crowe, an hon. president, presented to Dr. Thomas Linn (in absentia), founder of the Association, on behalf of its members, an address and the latest edition of the Encyclopædia Medica. The evening concluded with a visit to the Russian ballets in the local theatre at the invitation of the directors of the Casino.

ROYAL COLLEGE OF PHYSICIANS OF LONDON.—The Registrar of this College announces that a Charles Murchison Scholarship in Clinical Medicine will be awarded after an examination on June 26th, and that a Streatfeild Research Scholarship in Medicine and Surgery, tenable for three years, and valued at £250 per annum, is to be offered in conjunction with the Royal College of Surgeons of England. Further information will be found in our advertisement columns.

ROYAL COLLEGE OF PHYSICIANS OF EDINBURGH.—A quarterly meeting of the College was held on May 1st, with Dr. Robert A. Fleming, the President, in the chair. Dr. James Thomson was introduced and took his seat as a Fellow of the College. Dr. John Bowes McDougall and Dr. Anna Justina Augusta Wilson were elected Fellows of the College.

Alfred Joseph Clark, Margaret Black Martin, David Taylor Hackie, Joseph Ryland Whitaker, and Mohamed Abd El-Hamid Gohar were elected Members of the College.

Dr. Robert Thin was elected a representative of the College on the Conjoint Committee of Management of the Triple Qualification.—Dr. William Russell was re-elected the representative of the College on the General Council of Medical Education and Registration.—The Lister Fellowship was awarded to Dr. Charles G. Lambie for his work on carbohydrate metabolism.

At an extraordinary meeting held the same day, Dr. Walter Tyrrell Benson was elected a Fellow of the College.

UNIVERSITY OF LONDON: *University College.*—A public lecture on Modern Trends in the Study of Animal Development will be given by Prof. R. G. Harrison, of Yale University, on Monday, May 21st, at 5.30 P.M. Prof. Elliot Smith, F.R.S., will preside and admission will be free without ticket.

BIOCHEMICAL SOCIETY.—The next meeting of the Society will be held on Saturday, May 12th, beginning at 11.45 P.M., in the Department of Brewing and Biochemistry of Fermentation, of the University of Birmingham.

UNIVERSITY OF LONDON GRADUATES' ASSOCIATION. At a meeting of the Council of this association, held on May 7th, it was resolved, nem. con., to support the re-election of Dr. E. Graham Little as representative of the University in Parliament.

WEST KENT MEDICO-CHIRURGICAL SOCIETY.—At a meeting of this Society to be held to-day (Friday, May 11th), at 8.45 P.M., at the Miller General Hospital, Greenwich, Dr. Charles Thomson will give a presidential address on Intestinal Stasis: Its Effects and Treatment.

Medical Diary.

SOCIETIES.

ROYAL SOCIETY OF MEDICINE, 1, Wimpole-street, W.

TUESDAY, May 15th.—5.30 P.M., GENERAL MEETING OF FELLOWS. Ballot for election to the Fellowship.

WEDNESDAY.—8.30 P.M., DERMATOLOGY, SURGERY. Special Discussion on Treatment of Varicose Ulcers by Intravenous Injection. Openers: Prof. Sicard (of Paris) (Dermatology), Mr. Twistington Higgins (Surgery). Other speakers will include Sir Sidney Alexander, Dr. Goldsmith, and Mr. David Levi.

THURSDAY.—5 P.M., DERMATOLOGY. (Cases at 4 P.M.) Annual General Meeting (at 4.45 P.M.). Election of Officers and Council. Cases: Dr. H. W. Barber: (1) Kaposi's Idiopathic Hæmorrhagic Sarcoma. (2) Morphœa with Root Distribution. Other cases will be shown. The Annual Dinner will be held at 7.45 for 8 P.M.

FRIDAY.—5 P.M., DISEASE IN CHILDREN. (Cases at 4.30 P.M.) Annual General Meeting: Election of Officers and Council. Cases will be shown. 8 P.M., OBSTETRICS. Annual General Meeting: Election of Officers and Council. Specimens: Mr. R. Christie Brown: A Case of Perforation of the Uterus, Following the Criminal Attempt to Induce Abortion in a Case of Tubal Pregnancy. Mr. J. Bright Banister: A Case of Ovarian Pregnancy. Mr. W. Gilliatt and Dr. R. M. Saunders: An Unusual Case of Interstitial Pregnancy. Short Communication: Dr. Everard Williams: Full-Term Pregnancy in a Patient with Grave Myelocytic Leukæmia. 6.30 P.M., ELECTRO-THERAPEUTICS. Annual General Meeting: Election of Officers and Council. Annual Dinner at 7.15 for 7.30 P.M. at the Café Verrey, Regent-street, W.

MEDICAL SOCIETY OF LONDON, 11, Chandos-street, Cavendish-square W.

The Annual General Meeting and Conversazione arranged for Monday, May 14th, has been postponed to Monday, May 21st. At 9 P.M. on this evening Sir Archibald Garrod will deliver an oration entitled "Lessons on Rare Maladies."

ROYAL SOCIETY OF TROPICAL MEDICINE AND HYGIENE.

THURSDAY, May 17th.—8.15 P.M. (at 11, Chandos-street, Cavendish-square, W.), preceded at 7.45 P.M. by a demonstration to illustrate the subject of the paper. Dr. George W. Bray (Medical Officer, Nauru, Central Pacific): Vitamin-B Deficiency in Infants—Its Possibility, Prevalence, and Prophylaxis.

LONDON CLINICAL SOCIETY.

THURSDAY, May 17th.—8.15 P.M. (at the London Temperance Hospital), Clinical Evening.

ROYAL MEDICO-PSYCHOLOGICAL ASSOCIATION.

WEDNESDAY, May 16th.—3.30 P.M. (in the Great Hall of the British Medical Association, Tavistock-square, W.C.), Sir John Macpherson: Maudsley Lecture—The New Psychiatry and the Influences which are Forming It.

ROYAL MICROSCOPICAL SOCIETY, 20, Hanover-square, W.

WEDNESDAY, May 16th.—7.30 P.M., Dr. H. Moore, D.Sc.: The Mode of Formation of the Image in the Microscope. Mr. G. F. Marrion, M.Sc., and Dr. A. S. Parkes, Ph.D.: The Effects of Inanition and Vitamin B Deficiency Upon the Testes of the Pigeon. Miss M. E. Shaw, M.Sc., and Dr. F. W. Rogers Brambell, D.Sc.: An Aberrant Ovary in a Frog.

ROYAL STATISTICAL SOCIETY.

TUESDAY, May 15th.—5.15 P.M. (in the Hall of the Royal Society of Arts, John-street, Adelphi, W.C.), Mr. D. Caradog Jones: The Cost of Living of a Sample of Middle-Class Families.

CHELSEA CLINICAL SOCIETY.

THURSDAY, May 15th.—8.30 P.M. (at the Hotel Rembrandt, Thurlow-place, S.W.), Dr. J. H. Ruffel and Dr. O. L. de Wesselow: Clinical Value of Biochemical Methods.

LECTURES, ADDRESSES, DEMONSTRATIONS, &c.

ROYAL COLLEGE OF PHYSICIANS OF LONDON: Harvey Celebrations.

MONDAY, May 14th.—11 A.M., Reception by the King at Buckingham Palace. 3 P.M., Reception at the College. 6.30 P.M., Dinner given by Grocers' Company, Grocers' Hall, E.C. 9 P.M., Lady Bradford "At Home," 8, Manchester-square.

TUESDAY.—10.30 A.M., Demonstrations at University College; kinematograph reproduction of Harvey's original experiments. 1.15 P.M., Luncheon at St. Bartholomew's Hospital. 4 P.M., Tea and Exhibition at St. Bartholomew's Hospital. 9 P.M., Conversazione at Merchant Taylors' Hall.

WEDNESDAY.—10.30 A.M., Demonstration at University College. 6.30 P.M., Dinner by the President and Fellows of the Royal College of Physicians at the Guildhall.

THURSDAY.—Visit to Oxford. 8.30 P.M., Reception by the President of the Royal Society at Burlington House.

FRIDAY.—Visit to Cambridge.

FELLOWSHIP OF MEDICINE AND POST-GRADUATE MEDICAL ASSOCIATION, 1, Wimpole-street, W.

MONDAY, May 14th, to SATURDAY, May 19th.—NATIONAL HOSPITAL FOR DISEASES OF THE HEART, Westmoreland-street, W. Clinical demonstration by Dr. Thomas Cotton on Tues., at 2.30 P.M.—ST. MARK'S HOSPITAL, City-road, E.C. Clinical demonstration by Mr. W. B. Gabriel on cases illustrating Diseases of the Rectum, on Tues., at 5 P.M.—ROYAL LONDON OPHTHALMIC HOSPITAL, City-road, E.C. Clinical demonstration by Mr. Whiting on Thurs., at 1 P.M. The above are free.—INFANTS HOSPITAL, Vincent-square, S.W. Course in Diseases of Infants, afternoons only (second week).—CENTRAL LONDON THROAT, NOSE AND EAR HOSPITAL, Gray's Inn-road, W.C. Intensive course—clinical and operative. Three weeks. All day.—MAUDSLEY HOSPITAL, Denmark Hill, S.E. Course in Psychological Medicine (third week).—NATIONAL HOSPITAL, Queen-square, W.C. Course in Neurology for two months. Particulars and fees from the Fellowship of Medicine.—ROYAL FREE HOSPITAL, Gray's Inn-road, W.C. On Wed., at 5 P.M., Prof. Louise McIlroy will give the first of four lecture-demonstrations on Antenatal Diagnosis and Treatment. Further particulars from the Secretary.

NATIONAL HOSPITAL, Queen-square, W.C.

MONDAY, May 14th.—2 P.M., Dr. Hinds Howell: Out-patient Clinic. 3.30 P.M., Dr. Riddoch: Spastic Paraplegia (1).

TUESDAY.—2 P.M., Dr. Walshe: Out-patient Clinic. 3.30 P.M., Dr. Risien Russell: The Significance of Muscular Atrophy.

THURSDAY.—2 P.M., Dr. Kinnier Wilson: Out-patient Clinic. 3.30 P.M., Dr. Gordon Holmes: Active Infective Diseases of the Central Nervous System (2).

FRIDAY.—2 P.M., Dr. Adie: Out-patient Clinic. 3.30 P.M., Sir Percy Sargent: Meningeal Tumours from the Surgical Standpoint.

ST. MARY'S HOSPITAL INSTITUTE OF PATHOLOGY, Paddington, W.

THURSDAY, May 17th.—5 P.M., Prof. Hamilton Hartridge, F.R.S.: Poisoning by Coal Gas and Products of Combustion.

WEST LONDON HOSPITAL POST-GRADUATE COLLEGE, Hammersmith-road, W.

MONDAY, May 14th.—10 A.M., Dr. Dowling: Skin Department. 2 P.M., Mr. Addison: Surgical Wards. 2 P.M., Dr. Trevor Davies: Gynæcological Department.

TUESDAY.—10 A.M., Medical Registrar: Medical Wards. 2 P.M., Dr. Shaw: Medical Out-patients. 2 P.M., Mr. Hamblen Thomas: Throat, Nose, and Ear Department.

WEDNESDAY.—10 A.M., Dr. Burnford: Medical Wards. 2 P.M., Dr. Scott Pinchin: Medical Out-patients. 2.30 P.M., Mr. Donald Armour: Surgical Wards.
THURSDAY.—10 A.M., Dr. Grainger Stewart: Neurological Department. 2 P.M., Mr. Simmonds: Surgical Out-patients. 2 P.M., Mr. MacDonald: Genito-Urinary Department.
FRIDAY.—10 A.M., Dr. Pritchard: Medical Wards. 12 noon, Dr. Ironside: Clinical Demonstration. 2 P.M., Mr. Vlasto: Throat, Nose, and Ear Department.
SATURDAY.—9.30 A.M., Dr. Burnford: Bacterial Therapy Department. 10 A.M., Dr. Owen: Children's Medical Out-patients.
TUESDAY, May 15th.—4.30 P.M., Special Lecture, Mr. Sinclair: Gall-stones.
Daily, 10 A.M. to 5 P.M., SATURDAYS, 10 A.M. to 1 P.M., In-patients, Out-patients, and Special Departments. Anæsthetic and Operative Surgery Courses.

CHADWICK PUBLIC LECTURE.
TUESDAY, May 15th.—8.15 P.M. (at the House of the British Medical Association, Tavistock-square, W.C.), Major Walter Elliot, M.P.: Sunlight—Natural and Manufactured—Its Use in Modern Medicine.

UNIVERSITY COLLEGE, Gower-street, London, W.C.
TUESDAY, May 15th, THURSDAY, May 17th, and FRIDAY, May 18th.—Prof. L. H. Henderson (Harvard): Blood. a Study in General Physiology.

ROYAL NORTHERN HOSPITAL, Holloway-road, N.
TUESDAY, May 15th.—3.15 P.M., Mr. C. C. Choyce: Some Reflections on Tumours of the Breast.

INSTITUTE OF HYGIENE, 28, Portland-place, W.
WEDNESDAY, May 16th.—3.30 P.M., Prof. J. W. H. Eyre: Rheumatism from the Bacteriological Viewpoint.

NORTH-EAST LONDON POST-GRADUATE COLLEGE, Prince of Wales's General Hospital, Tottenham.
MONDAY, May 14th.—2.30 to 5 P.M., Medical, Surgical, and Gynæcological Clinics. Operations.
TUESDAY.—2.30 to 5 P.M., Medical, Surgical, Throat, Nose and Ear Clinics. Operations.
WEDNESDAY.—2.30 to 5 P.M., Medical, Skin, and Eye Clinics. Operations.
THURSDAY.—11.30 A.M., Dental Clinics. 2.30 to 5 P.M., Medical, Surgical, and Ear, Nose and Throat Clinics. Operations.
FRIDAY.—10.30 A.M., Throat, Nose and Ear Clinics. 2.30 to 5 P.M., Surgical, Medical, and Children's Diseases Clinics. Operations.
On Tuesday and Friday, at 2.30 P.M., there will also be demonstrations of Surgical Cases and Cases for X Ray by Mr. W. E. Tanner and Dr. S. C. Shanks respectively.

LONDON SCHOOL OF DERMATOLOGY, St. John's Hospital, 49, Leicester-square, W.C.
MONDAY, May 14th.—5 P.M., Dr. J. E. M. Wigley: Napkin-Area Eruptions in Infants.
TUESDAY.—5 P.M., Dr. H. M. MacCormac: Treatment of Syphilis.
THURSDAY.—5 P.M., Dr. I. Muende: Pathology Demonstration.
FRIDAY.—5 P.M., Dr. K. Sibley: Alopecia.

UNIVERSITY OF BIRMINGHAM.
THURSDAY, May 17th.—4 P.M., Dr. L. G. Parsons: Recent Advances in Our Knowledge of Rickets and Allied Diseases. (Last Ingleby Lecture.)

MANCHESTER ROYAL INFIRMARY POST-GRADUATE COURSE.
TUESDAY, May 15th.—4.15 P.M., Dr. A. Ramsbottom: Treatment of Pernicious Anæmia.
FRIDAY, 4.15 P.M., Mr. W. H. Hey: Demonstration of Surgical Cases.

UNIVERSITY OF SHEFFIELD POST-GRADUATE CLINICS.
FRIDAY, May 8th.—3.30 P.M. (at the Royal Hospital), Dr. Skinner: Neurological Cases.

Appointments.

HACKWOOD, J. F., M.B. Lond., F.R.C.S. Eng. & Edin., has been appointed Resident Medical Officer, Farnborough Hospital, Kent.

MCGILL, H. M., M.B., B.Ch. Edin., Assistant Medical Officer to the Stokesley, Yorks, Board of Guardians.

Certifying Surgeons under the Factory and Workshop Acts: DAWSON, R., M.B., Ch.B. Aberd. (Middleton-in-Teesdale); WARD, K. L. S., M.B., Ch.B. Edin. (Westerham); and DOYLE, J. L. C., L.R.C.P. Lond., M.R.C.S. (Fakenham).

Vacancies.

For further information refer to the advertisement columns.

Bedford Borough.—M.O.H., &c. £900.
Bolton Infirmary Dispensary.—H.S. £150.
Brighton, Royal Sussex County Hospital.—Cas. H. S. £120.
Burnley County Borough.—Asst. M.O.H, &c. £475.
Cardiff, King Edward VII. Welsh National Memorial Assoc.—Area Asst. Tuber. P. £600.
Chelsea Hospital for Women, Arthur-street, S.W.—Jun. H.S. At rate of £100.
Chester Royal Infirmary.—H.S. £150. Also Hon. Phys.
City of London Maternity Hospital, 102, City-road, E.C.—Asst. Res. M.O. At rate of £80.
Denbigh, North Wales Counties Mental Hospital.—Third Asst. M.O. £300.
Durham County and Sunderland Eye Infirmary.—H.S. £450.
Durham County Council.—Asst. Welfare M.O. £600.
Durham, Holywood Hall Sanatorium, Wolsingham.—Asst. M.O. £450.
Evelina Hospital for Children, Southwark, S.E.—H.P. £120.
Exminster, near Exeter, Devon Mental Hospital.—Jun. Asst. M.O. £300.
Hong-Kong, University Faculty of Medicine.—Professor of Physiology. £800.
Hospital for Epilepsy and Paralysis, Maida Vale, W.—Med. Registrar. Honorarium of £100.
Leamington Spa, Warneford General Hospital.—Res. H. P. £165.
Leeds, City of.—Asst. M.O. for Maternity and Child Welfare. £600.
Leeds, St. James' Hospital.—H.P. and S. £200.
Leyton, Borough of.—M.O.H. £1100.
Liverpool and District Hospital for Diseases of Heart.—Research Fellowship. £150.
London Hospital, E. (Cardiographic Dept.).—Paterson Research Scholar. £400.
London Skin Hospital, 40, Fitzroy-square, W.—Hon. P. or S. and Surg. Reg.
Madras Presidency, India.—Specialist on Venereal Diseases. Rs.1600 per month.
Maidstone, Kent Education Committee.—School Medical Inspector. £600.
Manchester, Ancoats Hospital.—H.P. At rate of £100.
Manchester Royal Infirmary.—Med. Reg. £150.
Manor Hospital, Golders Green, N.W.—H.S. At rate of £200.
Metropolitan Hospital, Kingsland-road, E.—Phys. to Dis. of Skin Dept.
Middlesex Hospital, W.—Surg. and Asst. Surg.
Newcastle-upon-Tyne, Royal Victoria Infirmary.—Hon. Ophth. S.
New Zealand Mental Hospitals Dept.—Sen. Asst. M.O.'s. £765–£900.
Nottingham, Ransom Sanatorium.—Asst. Res. M.O. £375.
Queen's Hospital for Children, Hackney-road, E.—Phys. in charge of Skin Dept.
Royal College of Physicians of London.—Charles Murchison Scholarship in Clin. Med. 20 guineas.
Royal College of Physicians of London and Royal College of Surgeons, England.—Streatfeild Research Scholarship in Med. and Surg. £250.
Royal College of Surgeons of England.—Professors and Lecturers. Also Examiners in Dental Surgery.
Royal Naval Medical Service.—Surg. Lieutenants. £453.
St. Albans and Mid Herts Hospital and Dispensary.—Res. H.S. £150.
St. Andrew's Hospital, Dollis Hill, N.W.—Sen. and Jun. Res. M.O.'s. At rate of £150 and £120 respectively.
St. Andrew's University.—Chair of Midwifery and Gynæcology.
Shanghai Municipal Council, Public Health Dept.—Asst. Pathologist. Taels 600 per mensem.
Sheffield Royal Hospital.—Asst. Pathologist. £400.
Southampton, Royal South Hants and Southampton Hospital.—H.P. £130.
Stockport County Borough.—Asst. M.O. £600.
Stockport Infirmary.—H.S. £175.
University of London, South Kensington, S.W.—Sir William Dunn Chair of Pathology. £1330.
Walsall County Borough.—Asst. M.O. £600.
Walsall General Hospital.—H.S. At rate of £125.
Wembley Hospital.—Hon. Consulting Radiologist.
West London Hospital, Hammersmith-road, W.—H.P., H.S., Res. Asst. Cas. O. Also Aural and Ophth H.S. Each at rate of £100.
Winchester, Royal Hampshire County Hospital.—H.P. At rate of £150.

The following vacancies for Certifying Factory Surgeons are announced: Kirkwall (Orkney), Halstead (Essex), and Lewes (Sussex).

Births, Marriages, and Deaths.

BIRTHS.

ADAMS.—On May 4th, at Avenue-road, N.W., the wife of Dr. F. Shirley Adams, of a daughter.
BEVAN.—On April 30th, at a nursing home, the wife of Dr. Frank A. Bevan, of Hadleigh, Essex, of a daughter.
GIBSON.—On May 4th, at Amalfi, Kents-road, Torquay, the wife of Dr. Paul Currey Gibson, of a daughter.

MARRIAGES.

FINNY—MANNERS SMITH.—On April 30th, at St. George's Church, Camberley, Major Charles Morgan Finny, O.B.E., R.A.M.C., to Doris Manners Smith, daughter of the late Lieut.-Colonel John Manners Smith, V.C., C.V.O., C.I.E., and Mrs. Manners Smith, Home, King's Ride, Camberley.

DEATHS.

ELLIOTT.—On April 28th, at Broad-street, Stamford, George Elliott, L.R.C.P., L.R.C.S., aged 65.
FENN.—On May 3rd, at Ashley Park, Rusthall, Tunbridge Wells, Joseph H. Fenn, M.R.C.S., L.R.C.P., late Captain, R.A.M.C.

N.B.—A fee of 7s. 6d. is charged for the insertion of Notices of Births, Marriages, and Deaths.

Notes, Comments, and Abstracts.

THE HOSPITAL OF ST. MATTEO, ZARA.

THE writer of the article on Yugoslavia, which appeared last week in THE LANCET, sends us a description of this institution in Zara which he visited while on the tour. He points out that it would have been inconvenient to include an inspection of St. Matteo in an article dealing with Yugoslavia, inasmuch as that country and Italy manifest such reluctance to be associated in the minds of Europe. Zara and a few miles of territory to the east of it are, of course, in an Italian enclave on the Adriatic coast. "A section of the touring party," writes our correspondent, "complied with the necessary passport formulæ and went up from Sebenico to Zara. It was necessary to leave their car outside the city and enter by cabs which had been telephoned for to meet them on the frontier. In the city of Zara they were met by the Prefect, by Major Grant Smith, an English resident, and other representatives of science and business, and were conducted round the interesting city, when they had the good fortune to have an excellent cicerone, whose descriptions of the cathedral, the old noble residences, the fortifications, and harbour made clear why the possession of Zara has always played a part in political and military contests. But from the medico-social point of view the institution of the greatest interest offered by Zara proved to be the Hospital of St. Matteo, a shelter for aged and indigent women, owing its foundation to the generosity of a wealthy citizen named Pavaz. This handsome building, situated on the Cereria, just without the walls of the city, stands in large and well-kept grounds and interiorly is a model of cleanliness and good arrangement. The funds are administered by the Congregation of Charity, with a resident Sister Superior and a lay president; and public statements are made from time to time as to the care of the inmates. Such refuges for subjects who form a particularly difficult charge upon health authorities might well be instituted by charitable folk in this country, and the St. Matteo Hospital at Zara would be a good model."

POLYNEURITIS COMPLICATING MUMPS.

NEUROLOGICAL complications of epidemic parotitis are not uncommon, but it is rare to find diffuse polyneuritis following this infection. In a case recently published by Dr. W. S. Collens and Dr. M. A. Rabinowitz [1] the patient was a man of 29 who had a mild attack of mumps followed a week later by orchitis. Three weeks after the onset of mumps he felt weakness in the legs, and in 48 hours was almost unable to move; besides quadriplegia he had complete bilateral upper and lower facial paralysis. No reflexes, deep or superficial, could be elicited, and after another day he complained of hyperæsthesia of the hands and feet. About a week later he showed signs of returning control, and about four months from the onset he was perfectly well again. The authors quote four previous cases, which are all they have been able to find in the literature; in each of them, as in their own, the picture resembled the condition seen in other specific fevers and in poisoning by alcohol and lead. Flaccid paralysis of the extremities, loss of both deep and superficial reflexes, slight or no sensory disorders and disturbance of muscle and joint sense were common to the five cases. All the patients recovered completely after illnesses lasting for 1–12 months. Whilst this alarming syndrome is too rare to be of much clinical importance, it raises once again the interesting question why such a complication should affect some patients and not others.

THE SCHOOL-BOY'S HOWLER.

THE familiar school-boy howler does not arouse in the minds of most people much curiosity into the causes of juvenile malapropisms. Sir John Adams, however, attempts a scientific investigation [2] into the causes of these amusing and instructive phenomena. Close scrutiny of the atmosphere of the class-room throws light upon the child's errors. The over-zealous teacher may be led to the belief that his function is to impart knowledge at all costs. He may take delight in so doing and may be completely carried away by his own flow of pedagogic eloquence. Indeed, according to Sir John Adams the pedantry that grows out of excess of method is manifest in the rigid adherence to rule even of such apparently broad and free methods as those of Froebel and Montessori. Unless the peculiarity of the mental life of the child be taken into account, unless the teacher identifies himself with the child's mental world, modifying his vocabulary and seeing the child's needs, he will find that the knowledge he has imparted has been twisted into the youthful mould and will, when re-evoked, appear grotesquely distorted. It is the duty, therefore, of the teacher to build a bridge from this inner world to that world of organised experience which adult and realistic thinking has constructed. To achieve this the teacher must have explored the processes of the one and the collective and systematised data of the other.

Sir John Adams has written an enlightened and instructive book, illuminated with flashes of humour and a warm humanity.

RELATION OF THE THYROID GLAND TO THE NASAL MUCOUS MEMBRANE.

THE theory has been put forward that a common embryological origin has imposed on the thyroid gland and the nasal mucous membrane a common response to stimuli. Dr. Giuseppe Calogero, of the University of Naples, has lately published [1] some experiments which are intended to establish the reality of the connexion between the two. He operated on a dog and five guinea-pigs by cauterising the nasal fossæ with a weak nitric acid solution on a fine red hot iron wire. The animals were afterwards killed, and on examining the thyroid gland Dr. Calogero found histological changes from which he infers that the stimulus produced by the cauterisation gives rise in the first instance to an increase in the secretory activity of the thyroid, and secondarily leads to phenomena of hyperplasia in the lining cells of the acini, presumably through the medium of the sympathetic nerves which connect both the nasal mucosa and the thyroid gland to the cervical tract of the sympathetic.

DOMESTIC BIOLOGY.

AN admirable account [2] of the various small animals which are likely to interest students of domestic science has recently been written by Miss P. Esdaile, D.Sc. The title is a little misleading, for the book contains nothing about vertebrates which certainly include a number of "harmful and useful animals." She deals, however, with protozoa, worms, insects, spiders, and mites, and describes those which produce familiar articles (e.g., the bath sponge and the silkworm moths) and those which are pests (e.g., cockroaches, wood-boring beetles, clothes moths), indicating at the same time appropriate methods of control of the spread of the latter group. In small details the book is open to a few criticisms; it is, for example, hardly correct to describe *Xenopsylla cheopis* as a "parasite" of man (p. 70) and *Ptinus* would be easier to recognise (p. 119) if he was shown sideways; the theoretical morphology on pp. 28–29 is out of place. But we know of no other book which covers just the same ground, and it should certainly find a place in the library of every housewife who wants to understand her job; district nurses will also find it useful.

THE YEAR OF AMBROISE PARÉ'S BIRTH.

Dr. Herbert Spencer writes: In my Lloyd Roberts Lecture, 1924, I stated: "As with the founder of this lecture, there seems to be a doubt about the actual date of Paré's birth, the years 1509, 1510, 1514, 1516, 1517, 1528 having been given by various authors. Malgaigne, 'Œuvres complétes d'Ambroise Paré,' 1840, states, on the authority of Bégin, that 'A. Paré was actually born in 1517.' He would thus be 73 and not 80, as usually stated, at the time of his death." I was unable to obtain access to the evidence on which Bégin based his statement. It is to be hoped that some French medical historian will settle the date of the birth of the great reformer of surgery and midwifery.

A HOME FOR DISSEMINATED SCLEROSIS.

"PERPLEXED" writes:—I should be very grateful if any of your readers would tell me of a home which would receive a middle-aged patient of mine suffering from disseminated sclerosis. She could only afford to pay 3 or 4 guineas a week.

A CORRECTION.

Dr. SPENCER MORT writes:—A short time ago I sent a communication to THE LANCET (1927, ii., 1341) on the Value of Sodium Tetra-Iodo-Phenolphthalein. . . . In it was a statement that a patient had been "referred to me recently by Mr. James McClure for diagnosis and treatment." Mr. McClure tells me this is not so, and at his wish I write to ask if you will kindly insert this correction.

---

[1] Archives of Internal Medicine, 1928, xli., 61.

[2] Errors in School: Their Causes and Treatment. By Sir John Adams, M.A., B.Sc., LL.D., sometime Professor of Education in the University of London. University of London Press. 1927. Pp. 320. 6s.

[1] Folia Medica, 1928, xiv.

[2] Economic Biology for Students of Social Science. Part I. Harmful and Useful Animals. By Philippa C. Esdaile, D.Sc. University of London Press. 1927. With 150 text-figures. Pp. 175. 7s. 6d.